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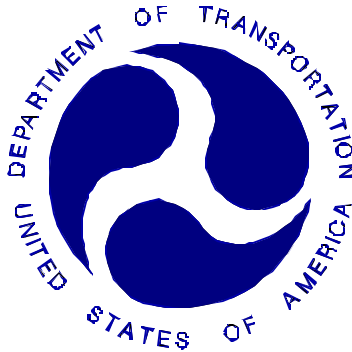
**NEW CAR ASSESSMENT PROGRAM (NCAP)
FRONTAL BARRIER IMPACT TEST**

GENERAL MOTORS CORPORATION
2004 CHEVROLET COLORADO
4-DOOR PICKUP

NHTSA NUMBER: M40103

GENERAL DYNAMICS TEST NUMBER: 8462-NCAP-42

GENERAL DYNAMICS
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FINAL REPORT

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16. Abstract A frontal load cell barrier test of a 2004 Chevrolet Colorado 4-Door Pickup was performed at General Dynamics crash test facility in Buffalo, New York, on January 29, 2004. The impact velocity was 56.97 kph and the temperature at the barrier face was 20°C. The maximum post-test vehicle crush was 520 mm. The test vehicle was equipped with 3-point restraint systems with torso belt pretensioners and force limiters, knee bolsters, head restraints and airbags at both the driver and right outboard passenger seating positions. With respect to FMVSS 208 "Occupant Crash Protection - Injury Criteria" both the driver and passenger appeared to comply with head, chest, and femur requirements.					
ATD Position	HIC	Clip (g's)	Chest Disp (mm)	Left Femur (N)	Right Femur (N)
Driver (061)	778.2	46.0	-38.4	-1694.1	-2260.6
Passenger (064)	587.4	46.6	-34.4	-4024.4	-2327.9
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SECTION 1

PURPOSE AND SUMMARY OF TEST

1.1 PURPOSE

This 56.97 kph frontal barrier impact test is part of the Vehicle Barrier Impact Testing Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-01-D-32005. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for an impact speed in excess of the current 48.3 kph requirements.

The 56.97 kph frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards Laboratory Indicant Test procedure.

1.2 TEST PROCEDURE

This 56.97 kph frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards (OCS) New Car Assessment Program (NCAP) Laboratory Indicant Test Procedure, dated December 1999. Data was obtained indicant of FMVSS 208, "Occupant Crash Protection"; FMVSS 212, "Windshield Retention"; FMVSS 219, "Windshield Zone Intrusion (Partial)"; and FMVSS 301 "Fuel System Integrity" performance. Procedures for receiving, inspection testing and reporting of test results are described in the test procedures and are not repeated in this report.

One real-time camera and 16 high-speed cameras were used to document the frontal barrier impact event. Camera locations and other pertinent camera information can be found in this report.

Two Part 572E, 50th percentile male anthropomorphic test devices (ATDs), were placed in the driver and right-front passenger seating positions according to dummy placement instructions specified in the Laboratory Indicant Test Procedure.

Both ATDs were fully instrumented with nine accelerometer array head, chest and pelvis triaxial accelerometers, chest displacement potentiometers, upper neck transducers, right/left femur load cells, and lower leg instrumentation. Seat belt load cells were also on the driver's and passenger's lap belts to measure dummy pelvic section loading. The driver (position 1) ATD (Serial No. 061) and the right-front passenger (position 2) ATD (Serial No.064) were used in two tests (M40510 and M45108) previous to this test. Certification details, along with instrumentation calibration data, are found in Appendix C.

The vehicle, occupant, camera and measurement data are presented in Section 2. Appendix A contains the still photograph prints. The 193 channels of data were recorded on an on-board data acquisition system. Appendix B contains the vehicle, load cell barrier and dummy response data traces. Appendix C contains the dummy calibration data and Appendix D contains the transducer calibration dates.

1.3 SUMMARY OF FRONTAL BARRIER IMPACT TEST

A load cell barrier consisting of 36 load cells was impacted by a 2004 Chevrolet Colorado 4-Door Pickup at a velocity of 56.97 kph. The test was performed at General Dynamics on January 29, 2004. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A.

The occupant data is summarized below.

	HIC	Clip (g)	Chest Disp. (mm)	Left Femur (N)	Right Femur (N)	Belt Spool (mm)	Belt Stretch (mm/50 mm)
Driver ATD	778.2	46.0	-38.4	-1694.1	-2260.6	*	*
Passenger ATD	587.4	46.6	-34.4	-4024.4	-2327.9	*	*

* The vehicle was equipped with torso belt pretensioners and force limiters – this instrumentation was not installed.

There was 100 percent windshield retention and no intrusion into the protected zone of the windshield during the event. There was no Stoddard solvent leakage after the event or during any phase of the static rollover.

The maximum vehicle static crush was 520 mm and both the driver and passenger side doors remained closed during the impact event and were operable after the impact.

The driver's visible contact points were as follows: the face to the center of the airbag, the back of the head to the center of the head restraint, the chest to the airbag and the left and right knees to the knee bolster. The passenger's visible contact points were as follows: the face to the center of the airbag, the back of the head to the center of the head restraint, the chest to the airbag and the left and right knees to the knee bolster.

The 2004 Chevrolet Colorado 4-Door Pickup did not exceed the requirements of FMVSS 208, FMVSS 212, FMVSS 219, and FMVSS 301. Data pertaining to these standards are presented in the data sheets.

SECTION 2

GENERAL TEST AND VEHICLE PARAMETER DATA

DATA SHEET NO. 1 CRASH TEST SUMMARY

Vehicle NHTSA No.: M40103 Test Mode: 56.3 kph Frontal Barrier
Test Date: January 29, 2004 Time: 14:01 Temperature: 20 °C
Vehicle Make/Model/Body Style: 2004 Chevrolet Colorado 4-Door Pickup
Vehicle Test Weight: 2104.5 kg
Vehicle/Barrier Impact Angle: 0 °
Impact Velocity: 56.97 kph
Maximum Static Crush: 520 mm
Vehicle Rebound: 479 mm

DUMMIES:

DRIVER

PASSENGER

Type:

572E

572E

Restraint System:

Three-point safety belt with
torso pretensioner and force
limiter, Airbag, Knee Bolster
and Head Restraint

Three-point safety belt with
torso pretensioner and force
limiter, Airbag, Knee Bolster
and Head Restraint

Number of Data Channels: 193

Number of Cameras: 1 Real Time

16 High Speed

DOOR OPENING DATA:

Closed, Latched and Operable without Tools - Left Front

Closed, Latched and Operable without Tools - Right Front

Front Seat(s) Data:

DRIVER

PASSENGER

Seat Track Failure: (mm of shift)

0

0

Seat Back Failure:

None

None

VISIBLE DUMMY CONTACT POINTS:

DRIVER

PASSENGER

Head:

The face to the center of the
airbag and the back of the head
to the center of the head
restraint

The face to the center of the
airbag and the back of the head
to the center of the head
restraint

Abdomen:

-

-

Chest:

None

None

Knees:

Knee Bolster

Knee Bolster

DATA SHEET NO. 2 GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION:

Year/Make/Model/Body Style: 2004 Chevrolet Colorado 4-Door Pickup

NHTSA No. : M40103 ; VIN: 1GCDS136148104733 ; Color: Green

Engine Data: 5 cylinders; - CID; 3.5 Liters; - cc

Placement: X Longitudinal or In-Line; - Transverse or Lateral

Transmission Data: 4 speeds; - Manual; X Automatic; X Overdrive

Final Drive: X Rear Wheel Drive; - Front Wheel Drive; - Four Wheel Drive

Safety Belt Features – Driver X Pretensioner (Shoulder); X Load Limiter; X Adj. Anchorage

Safety Belt Features - Passenger X Pretensioner (Shoulder); X Load Limiter; X Adj. Anchorage

Major Options: X A/C; X Pwr.Strg.; X Pwr. Brakes

X Pwr. Windows; X Pwr. Door Locks; X Tilt Wheel

Date Received: 12/22/2003 ; Odometer Reading 61 km

Selling Dealer: West Herr Chevrolet Hamburg

& Address: 5025 Southwestern Boulevard Hamburg, NY 14075-2607

DATA FROM TIRE VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured by: General Motors Corporation

Date of Manufacture 11/03

GVWR: 2404 kg; GAWR: 1249 kg FRONT; 1314 kg REAR

DATA FROM TIRE PLACARD:

Recommended Tire Size: P265/75R15

* Recommended Cold Tire Pressure: 210 kpa FRONT; 210 kpa REAR

DATA FROM TIRE SIDEWALL:

Size of Tires on Test Vehicle: P265/75R15 112S ; Manufacturer: General

Tire Pressure with Maximum Capacity Vehicle Load: Front: 300 kPa; Rear: 300 kPa

Treadwear: 500 ; Traction: A ; Temperature: B

VEHICLE CAPACITY DATA:

Type of Front Seats: - Bench; - Bucket; X Split Bench

Number of Occupants: 3 Front; 3 Rear; 6 Total

Vehicle Capacity Weight (VCW) = 557 kg

No. of Occupants x 68.04 kg = 408.24 kg

Rated Cargo/Luggage Weight (RCLW) = 148.76 kg (136.1 kg Maximum)

*Tire pressure used for test

DATA SHEET NO. 2 GENERAL TEST AND VEHICLE PARAMETER DATA (cont.)

WEIGHT OF TEST VEHICLE AS RECEIVED FROM DEALER (with maximum fluids)= UDW:

Right Front	=	<u>478.0</u>	kg	Right Rear	=	<u>408.0</u>	kg
Left Front	=	<u>530.0</u>	kg	Left Rear	=	<u>409.0</u>	kg
TOTAL FRONT	=	<u>1008.0</u>	kg	TOTAL REAR	=	<u>817.0</u>	kg
TOTAL DELIVERED WEIGHT	=	<u>1825.0</u>	kg				
% of Total Front of Vehicle Weight	=	<u>55.2%</u>		% of Total Rear Weight	=	<u>44.8%</u>	%

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Delivered Weight (UDW)	=	<u>1825.0</u>	kg
Rated Cargo/Luggage Weight (RCLW)	=	<u>136.1</u>	kg (136.1 kg Maximum)
Weight of 2 p.572 Dummies @ 76 each	=	<u>152</u>	kg
TARGET TEST WEIGHT	=	<u>2113.1</u>	kg

WEIGHT OF TEST VEHICLE WITH TWO DUMMIES AND 127.5 KG OF CARGO WEIGHT:

Right Front	=	<u>521.5</u>	kg	Right Rear	=	<u>504</u>	kg
Left Front	=	<u>575.0</u>	kg	Left Rear	=	<u>504</u>	kg
TOTAL FRONT	=	<u>1096.5</u>	kg	TOTAL REAR	=	<u>1008.0</u>	kg
TOTAL TEST WEIGHT	=	<u>2104.5</u>	kg				
% of Total Front Weight	=	<u>52.1%</u>	%	% of Total Rear Weight	=	<u>47.9%</u>	%
Weight of Ballast Secured in Vehicle Trunk Area	=	<u>0</u>	kg				
Vehicle Components Removed for Weight Reduction:				Side view mirrors; Rear side window glass, tail lights, rear window glass			

VEHICLE ATTITUDE (all dimension in millimeters):

AS DELIVERED:	RF	<u>910</u>	LF	<u>907</u>	RR	<u>949</u>	LR	<u>935</u>
FULLY LOADED:	RF	<u>898</u>	LF	<u>890</u>	RR	<u>909</u>	LR	<u>903</u>
AS TESTED:	RF	<u>898</u>	LF	<u>895</u>	RR	<u>910</u>	LR	<u>909</u>
Vehicle's Wheel Base:		<u>3200</u>	mm					
Location of Vehicle's C.G.:		<u>1533</u>	mm rearward of front wheel center.					

FUEL SYSTEM DATA:

Fuel System Capacity From Owner's Manual	=	<u>74.2</u>	liters
Usable Capacity Figure Furnished by COTR	=	<u>74.2</u>	liters
Test Volume Range (92 to 94% of Usable Capacity)	=	<u>68.26</u>	to <u>69.75</u> liters
ACTUAL TEST VOLUME	=	<u>68.5</u>	liters (with entire fuel system filled)
Test Fluid Type:	<u>Stoddard Solution</u>	;	Spec. Grav. = <u>0.764</u>
	Kinematic Viscosity = <u>0.96</u>	centistokes;	Color = <u>Orange</u>
Type of Fuel Pump: Electric-	<u>X</u>	;	Mechanical- <u>-</u>
Does Electric Pump operate with ignition switch "ON" & engine "OFF"		Yes- <u>X</u>	No- <u>-</u>
<u>Details of Fuel System: Tank – left of center ahead of the rear axle; Lines – inside left frame rail;</u>			
<u>Filler neck – left side forward of rear axle.</u>			

DATA SHEET NO. 3 POST IMPACT DATA

TYPE OF TEST:

Type of Test: Frontal Barrier Impact Angle: 0°
Test Date: January 29, 2004 Time: 14:01 Temperature: 20 °C
Vehicle NHTSA No.: M40103
Required Impact Velocity Range: 55.5 to 57.1 kph

BARRIER IMPACT VELOCITY: (Speed traps within 5 feet of impact plane.)

Trap No. 1 = 56.97 kph; Trap No. 2 = 56.97 kph
Distance from vehicle to barrier: (1) entering trap = 813 mm
(2) exiting trap = 305 mm

VEHICLE STATIC CRUSH: (mm) (For frontal and rear impacts only.)

Vehicle Length:

Pre-Test	Left = <u>5191</u> ; C/L = <u>5265</u> ; Right = <u>5196</u>
Post-Test	Left = <u>4761</u> ; C/L = <u>4745</u> ; Right = <u>4745</u>
Crush	Left = <u>430</u> ; C/L = <u>520</u> ; Right = <u>451</u>
AVERAGE	= <u>467</u> mm

VEHICLE REBOUND: (From rigid barrier only.)

Distance from front of test vehicle to impact point:

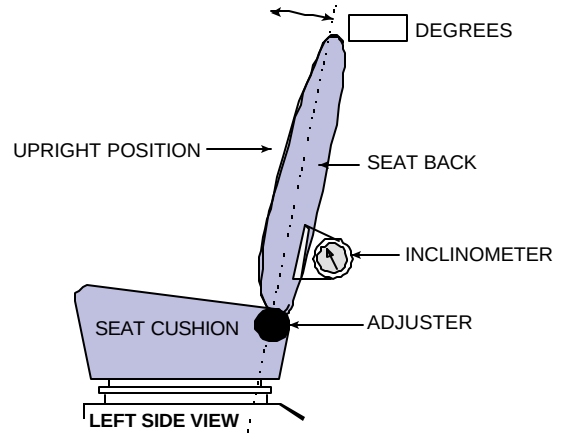
	Left = <u>468</u> ; C/L = <u>482</u> ; Right = <u>487</u>
AVERAGE	= <u>479</u> mm

DATA SHEET NO. 4 TEST VEHICLE INFORMATION

VEHICLE IDENTIFICATION:

Model Year : 2004 Vehicle Model: Chevrolet Colorado Body Style : 4-Door Pickup

1. Nominal Design Riding Position for adjustable driver and passenger seat backs. Please describe how to position the inclinometer to measure the seat back angle. Include description of the location of the adjustment latch detent, if applicable.



FRONT SEAT ASSEMBLY

Seat back angle for driver's seat: 22.5

Measurement instructions: Measure angle at upper outboard seat frame.

Seat back angle for passenger's seat: 22.5

Measurement instructions: Measure angle at upper outboard seat frame.

2. Seat Fore and Aft Positioning

Positioning of the driver's seat: Seat placed in mid-position (120 mm of 240 mm travel or detent 12 of 0 to 24 detents)

Positioning of the passenger's seat: Same as the driver's seat.

3. Fuel Tank Capacity Data

3.1 A. "Usable Capacity" of the standard equipment fuel tank is 74.2 liters

B. "Usable Capacity" of the optional equipment fuel tank is - liters

C. "Usable Capacity" of the vehicle(s) used for certification testing to requirements of FMVSS 301 = 74.2 liters

3.2 Amount of Stoddard solvent added to vehicle(s) used for certification test(s) = 70.4 liters

3.3 Is vehicle equipped with electric fuel pump? Yes- X ; No- -

If YES, explain the vehicle operating conditions under which the fuel pump will pump fuel.

When the key is turned to the 'ON' position for 2 to 3 seconds and while the engine is running.

DATA SHEET NO. 4 TEST VEHICLE INFORMATION (cont.)

4. STEERING COLUMN ADJUSTMENTS:

Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when it is moved through its full range of driving positions. If the tested vehicle has any of these adjustments, does your company use any specific procedures to determine the geometric center.

Operational Instructions:

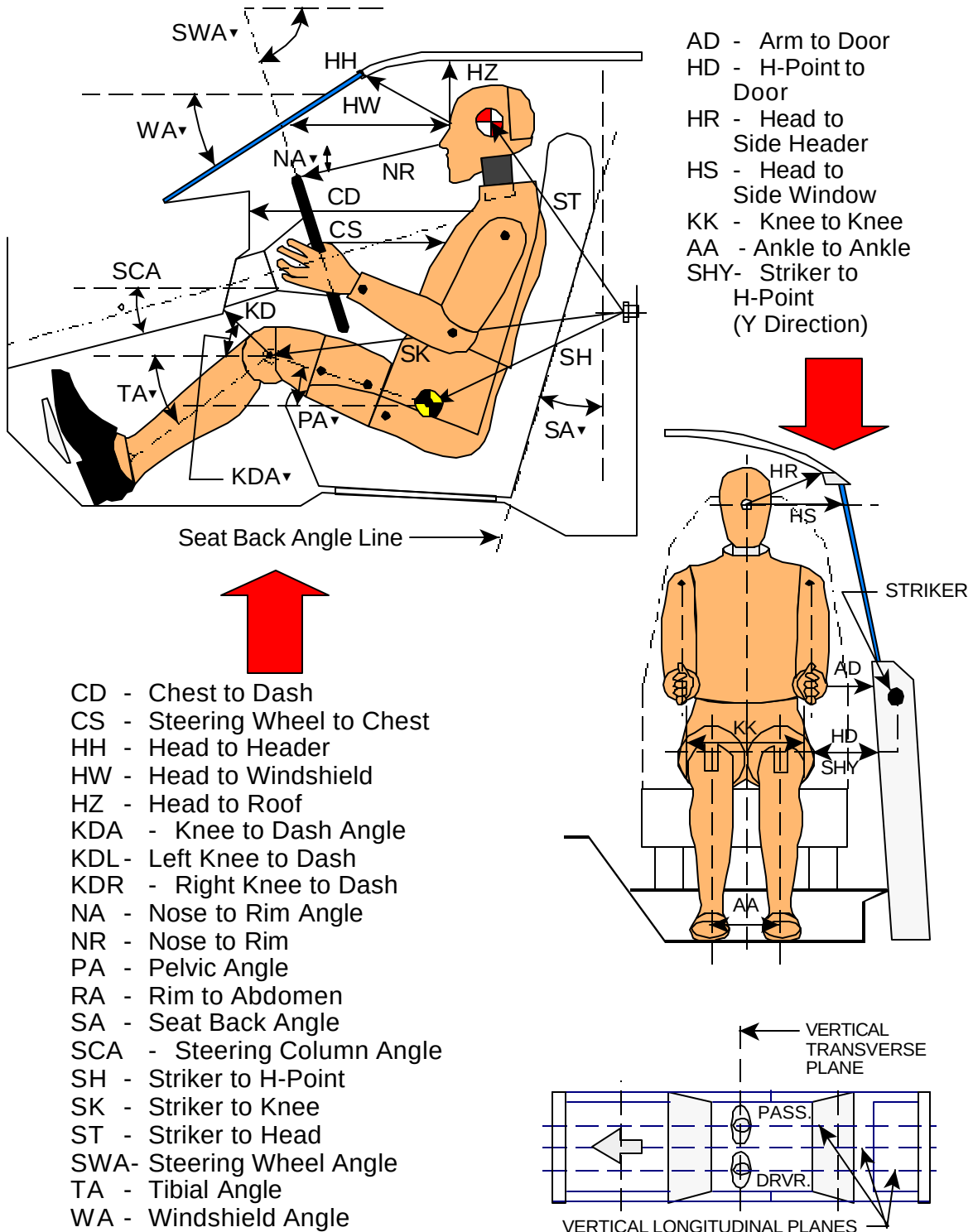
Mid-position (third detent of five total) to an angle of 24°

5. SEAT BELT UPPER ANCHORAGE

Nominal design riding position:

There are four total detents. The test position was the first detent below full up.

DATA SHEET NO. 5 FRONT SEAT DUMMY POSITIONING MEASUREMENTS IN VEHICLE
DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS



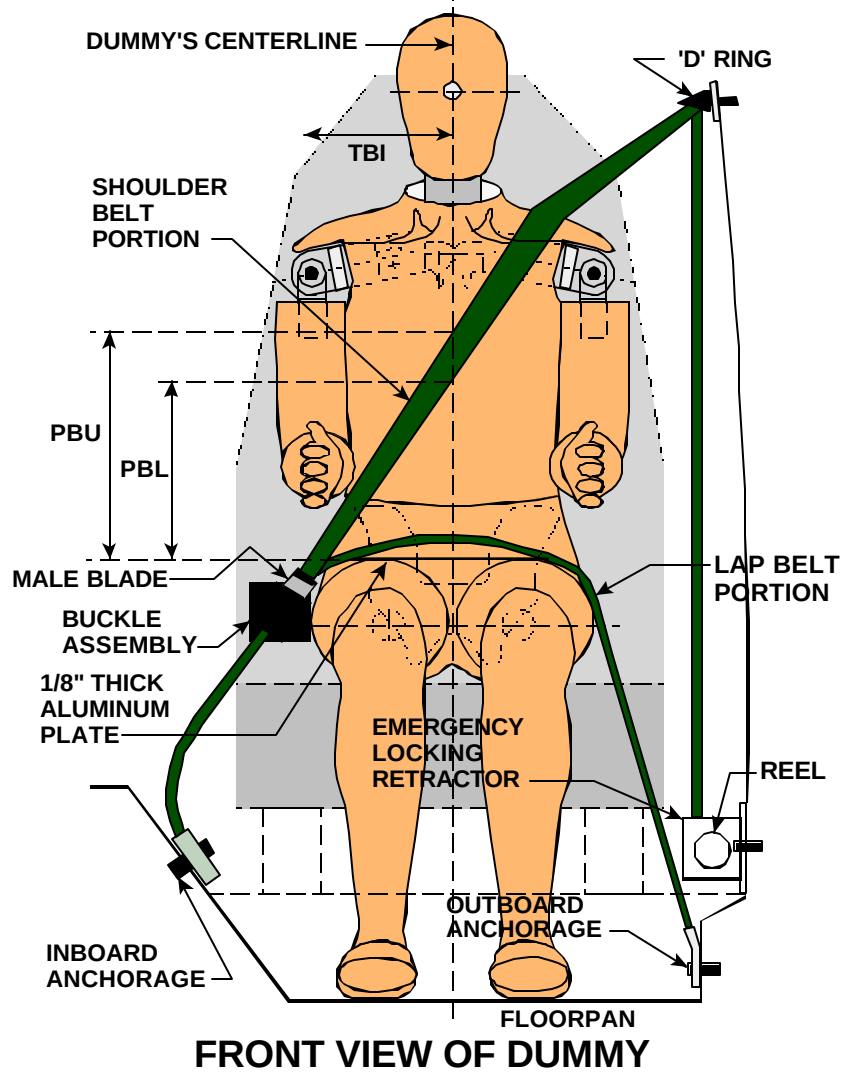
DATA SHEET NO. 5 FRONT SEAT DUMMY POSITIONING MEASUREMENTS IN VEHICLE (cont.)

	DRIVER (Serial #061)			PASS. (Serial #064)		
WA ⁰	36 deg.			N/A		
SWA ⁰	66 deg.			N/A		
SCA ⁰	24 deg.			N/A		
SA ⁰	22.5 deg.			22.5 deg.		
HZ	200			209		
HH	410			410		
HW	592			610		
HR	218			221		
NR	433	Angle	-14 deg.	N/A		
CD	560			541		
CS	330			N/A		
RA	218			N/A		
KDL	151	Angle (KDA)	30 deg.	130		
KDR	137			150	Angle (KDA)	28 deg.
PA ⁰	23.7 deg.			24.0 deg.		
TA ⁰	46.0 deg.			42.4 deg.		
KK	265			260		
AA	240			205		
ST	570	Angle	20 deg.	570	Angle	20 deg.
SK	673	Angle	94 deg.	673	Angle	92 deg.
SH	315	Angle	117 deg.	310	Angle	116 deg.
SHY	210			200		
HS	310			309		
HD	168			148		
AD	130			118		

Dimensions in millimeters

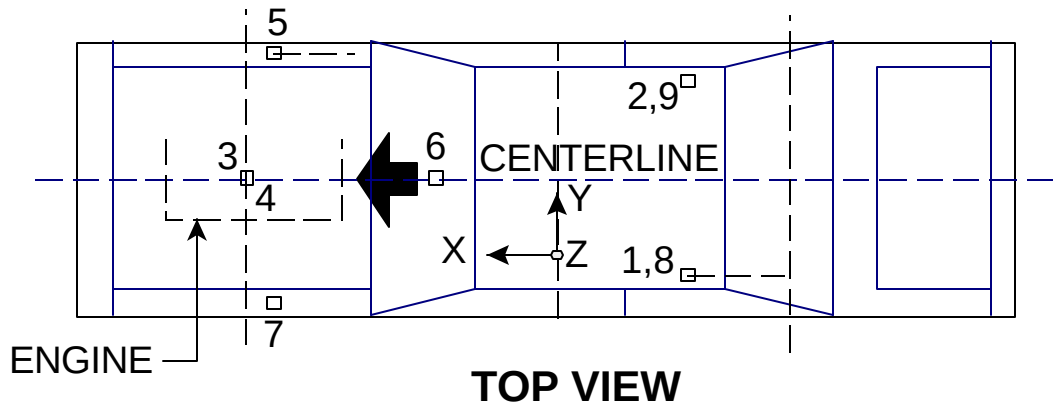
DATA SHEET NO. 6 SEAT BELT POSITIONING DATA

SEAT BELT POSITIONING DATA

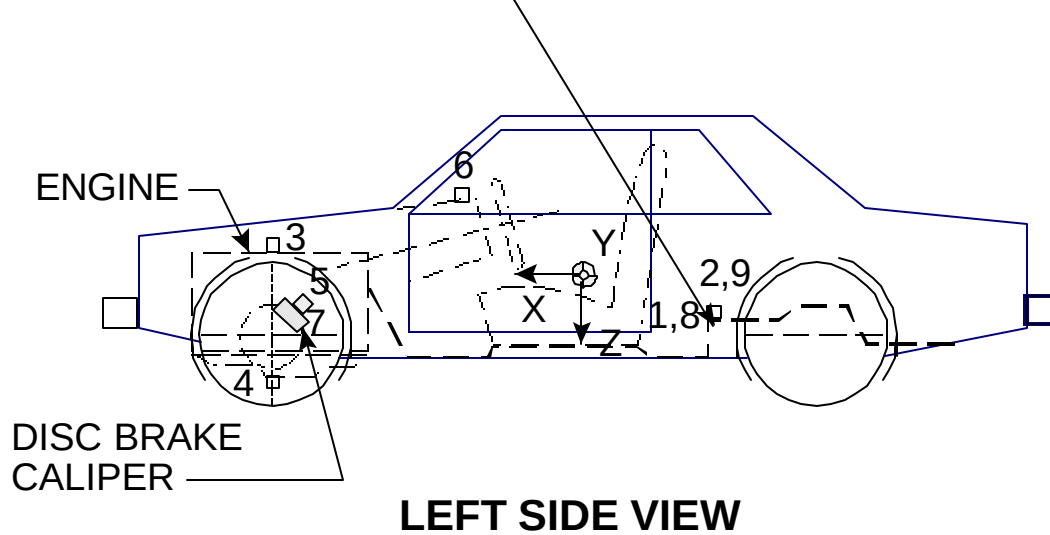


	DRIVER DUMMY (mm)	PASSENGER DUMMY (mm)
PBU -- Top surface of alum. plate to upper edge	290	320
PBL-- Top surface of alum. plate to belt lower edge	210	240
LAP BELT TENSION	10 N	10 N
SHOULDER BELT TENSION	Retractor	Retractor

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY



REAR SEAT CUSHION
ASSY. FRONT ATTACHMENT
BRACKET SUPPORT



Note: Vehicle accelerometer location and data summary shown in DATA SHEET NO. 7

DATA SHEET NO. 7 VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY (cont.)

LOCATION		PRE-TEST LENGTH (mm)		
		X	Y	Z
1	Left Rear Seat Cross Member X	2386	-609	-340
2	Right Rear Seat Cross Member X	2386	616	-338
3	Top of Engine Block	4758	93	-747
4	Bottom of Engine	4143	98	-136
5	Disc Brake Caliper @ Right Side	4309	779	-244
6	Instrument Panel	3587	-4	-967
7	Disc Brake Caliper @Left Side	4315	-768	-284
8	Left Rear Seat Cross Member Z	2386	-609	-340
9	Right Rear Seat Cross Member Z	2386	616	-338

LOCATION NUMBER	DESCRIPTION	MAXIMUM VALUE (g's)			
		Pos.	msec.	Neg.	msec.
1	Left Rear Seat Cross Member X	5.4	88.4	-37.6	14.3
2	Right Rear Seat Cross Member X	5.7	154.5	-41.3	42.4
3	Top of Engine Block	45.8	44.1	-106.7	32.8
4	Bottom of Engine	26.2	43.6	-83.1	35.1
5	Disc Brake Caliper @ Right Side	44.5	61.8	-94.9	6.1
6	Instrument Panel	§	§	§	§
7	Disc Brake Caliper @Left Side	§	§	§	§
8	Left Rear Seat Cross Member Z	17.0	44.5	-12.0	105.1
9	Right Rear Seat Cross Member Z	‡	‡	‡	‡

‡ - Questionable data after 41 ms.

§ - Questionable Data

DATA SHEET NO. 8 DUMMY INJURY CRITERIA VALUES

Vehicle Year/Make/Model/Body Style: 2004 Chevrolet Colorado 4-Door Pickup

NHTSA Test No.: M40103 Test Date: January 29, 2004

		MAXIMUM VALUE							
		Driver				Passenger			
DESCRIPTION	Unit	Pos	msec	Neg	msec	Pos	msec	Neg	msec
Head 9 Array X Arm Y	g	11.5	49.4	-14.3	75.4	11.9	57.3	-10.5	53.5
Head 9 Array X Arm Z	g	21.4	48.3	-11.3	143.1	36.9	59.8	-7.1	152.0
Head 9 Array Y Arm X	g	23.5	181.5	-74.5	67.7	22.9	216.1	-65.8	74.8
Head 9 Array Y Arm Z	g	18.2	58.7	-9.6	98.3	30.5	57.7	-4.8	111.6
Head 9 Array Z Arm X	g	28.3	178.2	-82.2	64.8	35.9	216.0	-65.7	77.3
Head 9 Array Z Arm Y	g	10.1	174.6	-14.6	74.8	8.1	81.6	-5.9	137.2
Head X	g	24.1	177.9	-70.7	68.1	22.6	216.7	-61.7	74.9
Head Y	g	6.9	176.4	-10.8	75.4	6.3	75.6	-4.9	149.5
Head Z	g	19.5	54.1	-9.7	98.1	26.7	74.1	-5.2	127.9
Head Resultant	g	71.4	68.1	0.0	-9.9	66.6	74.9	0.2	6.5
Redundant Head X	g	24.1	178.2	-69.9	68.1	22.9	216.2	-61.6	76.1
Redundant Head Y	g	7.0	177.0	-11.4	82.5	6.2	57.0	‡	‡
Redundant Head Z	g	20.0	54.1	-9.7	97.8	26.8	74.1	-5.2	114.4
Redundant Head Resultant	g	70.8	68.2	0.0	-15.4	66.6	73.8	0.1	11.3
Upper Neck Fx	N	870.6	69.0	-391.0	197.1	827.0	67.4	-370.1	141.8
Upper Neck Fy	N	85.8	161.5	†	†	171.1	85.0	-151.5	136.6
Upper Neck Fz	N	1725.5	65.0	†	†	1161.6	71.7	-382.1	248.6
Upper Neck F Resultant	N	1921.6	65.0	1.3	-9.0	1416.0	68.0	1.5	15.3
Upper Neck Mx	N-m	14.2	50.8	-16.6	128.9	16.3	95.4	-9.1	140.7
Upper Neck My	N-m	49.5	62.1	-13.9	114.1	54.7	67.2	-26.7	257.0
Upper Neck Mz	N-m	13.0 [†]	97.0 [†]	-4.6 [†]	146.6 [†]	6.0	90.7	-6.0	60.9
Upper Neck M Resultant	N-m	49.6	62.2	0.1	19.6	54.9	67.2	0.1	14.0
Chest X	g	9.4	151.6	-45.9	63.8	4.3	168.0	-46.8	64.8
Chest Y	g	3.1	133.7	-6.3	46.5	5.5	59.9	-2.8	92.5
Chest Z	g	7.8	100.5	-7.9	66.8	14.4	76.2	-7.6	127.2
Chest Resultant	g	46.7	63.9	0.1	-3.4	47.6	64.8	0.1	4.4

† - Data spike at 203 ms.

‡ - Data spikes present

DATA SHEET NO. 8 DUMMY INJURY CRITERIA VALUES (cont.)

Vehicle Year/Make/Model/Body Style: 2004 Chevrolet Colorado 4-Door Pickup

NHTSA Test No.: M40103 Test Date: January 29, 2004

		MAXIMUM VALUE							
		Driver				Passenger			
DESCRIPTION	Unit	Pos	msec	Neg	msec	Pos	msec	Neg	msec
Redundant Chest X	g	9.6	151.6	-45.7	63.7	4.1	167.3	-45.0	64.9
Redundant Chest Y	g	3.0	133.4	-6.2	46.6	6.3	60.0	-3.1	91.8
Redundant Chest Z	g	7.8	100.7	-8.3	67.0	13.9	76.4	-7.6	126.7
Redundant Chest Resultant	g	46.5	63.6	0.1	-13.2	45.9	65.0	0.1	1.9
Chest Displacement	mm	0.0	-20.3	-38.4	83.1	0.0	-10.4	-34.4	75.2
Pelvic X	g	§	§	§	§	63.4	58.8	-137.3	64.1
Pelvic Y	g	7.0	83.1	-7.7	29.4	37.1	56.3	-33.0	68.3
Pelvic Z	g	4.0	198.1	-19.7	59.4	14.4	68.1	-30.7	65.7
Pelvic Resultant	g	§	§	§	§	138.8	64.1	0.1	-35.4
Left Femur	N	783.5	34.5	-1694.1	43.1	931.2	33.6	-4024.4	50.3
Right Femur	N	905.5	30.9	-2260.6	54.9	1151.9	33.6	-2327.9	50.9
Left Upper Tibia Mx	N-m	16.6	65.9	-10.6	88.7	7.9	257.8	-64.6	54.4
Left Upper Tibia My	N-m	18.4	37.6	-95.7	58.8	90.3	47.3	-50.1	37.9
Left Lower Tibia Fz	N	1010.2	218.0	-1448.9	46.0	181.3	33.2	-2295.5	41.2
Left Lower Tibia Mx	N-m	40.2	66.4	-9.9	36.9	9.5	35.8	-36.8	52.0
Left Lower Tibia My	N-m	10.5	76.9	-63.5	42.8	87.1	47.1	-156.5	36.8
Right Upper Tibia Mx	N-m	71.7	45.9	-30.3	63.2	19.1	47.8	-15.8	53.9
Right Upper Tibia My	N-m	45.9	39.3	-79.0	30.0	73.4	71.7	-50.9	39.6
Right Lower Tibia Fz	N	103.4	153.6	-1587.7	57.7	255.0	127.2	-2278.4	53.2
Right Lower Tibia Mx	N-m	25.9	43.4	-65.9	57.3	51.4	54.0	-16.9	41.9
Right Lower Tibia My	N-m	97.8	59.2	-57.1	29.7	89.2	53.2	-68.4	40.0
Left Foot Aft Ax	g	20.3	54.2	-115.9	40.6	34.1	47.7	-177.0	47.3
Left Foot Aft Az	g	5.0	237.6	-43.1	43.3	53.2	33.8	-79.3	47.3
Left Foot Fore Az	g	45.1	51.1	-90.1	39.7	141.4	33.5	-239.3	47.3
Right Foot Aft Ax	g	16.4	92.4	-79.2	28.8	48.4	52.5	-136.7	40.7
Right Foot Aft Az	g	3.3	263.8	-87.1	41.1	6.9	36.8	-75.0	40.8
Right Foot Fore Az	g	108.5	46.8	-204.9	41.0	84.7	47.3	-183.8	40.6
Lap Belt Load	N	7205.9	49.7	-5.0	234.3	7922.7	50.6	-3.0	162.3

§ - Transducer failed at 42 ms.

DATA SHEET NO. 8 DUMMY INJURY CRITERIA VALUES (cont.)

Vehicle Year/Make/Model/Body Style: 2004 Chevrolet Colorado 4-Door Pickup

NHTSA Test No.: M40103 Test Date: January 29, 2004

HEAD INJURY CRITERIA (HIC)				
	HIC**	t ₁ (msec)	t ₂ (msec)	Average Acceleration t ₁ to t ₂
Position #1 - Driver	778.2	51.4	83.9	56.4 g
Position #2 - Passenger	587.4	56.3	92.3	48.4 g

** HIC is as defined in FMVSS 208. The maximum time interval from t₁ to t₂ is 36 milliseconds.

CLIP SUMMARY*				
	CLIP (g's)	t ₁ (msec)	t ₂ (msec)	CSI
Position #1 - Driver	46.0	62.1	65.1	498.6
Position #2 - Passenger	46.6	64.1	67.1	435.4

* The maximum chest resultant acceleration is defined as the maximum acceleration which exceeds 0.003 seconds in duration.

DATA SHEET NO. 8 DUMMY INJURY CRITERIA VALUES (cont.)
REDUNDANT DATA

Vehicle Year/Make/Model/Body Style: 2004 Chevrolet Colorado 4-Door Pickup
 NHTSA Test No.: M40103 Test Date: January 29, 2004

HEAD INJURY CRITERIA (HIC) REDUNDANT				
	HIC**	t ₁ (msec)	t ₂ (msec)	Average Acceleration t ₁ to t ₂
Position #1 - Driver	750.6	51.3	84.1	55.4 g
Position #2 - Passenger	594.7	56.0	92.0	48.7 g

** HIC is as defined in FMVSS 208. The maximum time interval from t₁ to t₂ is 36 milliseconds.

CLIP SUMMARY* REDUNDANT				
	CLIP (g's)	t ₁ (msec)	t ₂ (msec)	CSI
Position #1 - Driver	45.8	61.8	64.8	495.0
Position #2 - Passenger	45.1	64.3	67.3	404.5

* The maximum chest resultant acceleration is defined as the maximum acceleration which exceeds 0.003 seconds in duration.

DATA SHEET NO. 9 SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

BELT LENGTH DATA:

Belt length from trim panel exit
to bolt hole anchor point for
continuous webbing systems.

Driver

Passenger

2037

2027

Shoulder belt length as measured
on Part 572 Dummy.

897

897

Lap belt length as measured
on Part 572 Dummy.

950

940

Dimensions in millimeters

DATA SHEET NO.10 SUMMARY OF FMVSS 212 DATA

FMVSS NO. 212 - "WINDSHIELD MOUNTING" DATA

DETAILS OF WINDSHIELD MOUNTING SUCH AS RETENTION METHOD, TRIM TYPE, ETC.:

Windshield is bonded in place and covered with a 20 mm molding.

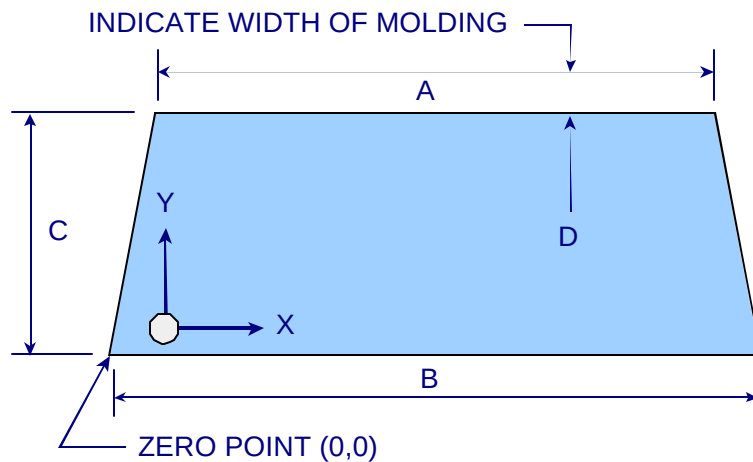
FMVSS 212 REQUIREMENTS:

The Post-Test periphery retention amount must be at least 75% of the Pre-Test periphery measurement for vehicles NOT equipped with automatic restraints, and 50% for each side of the windshield for vehicles equipped with automatic restraint systems for front occupants,

FMVSS 212 TEST DATA

	WINDSHIELD PERIPHERY		% OF RETENTION
	PRE-TEST (mm)	POST-TEST (mm)	
RIGHT SIDE	2065	2065	100.0%
LEFT SIDE	2065	2065	100.0%
TOTAL	4130	4130	100.0%

AREA OF RETENTION FAILURE: None



DIMENSIONS (mm)	
A	1210
B	1440
C	740
D	20

FRONT VIEW OF WINDSHIELD

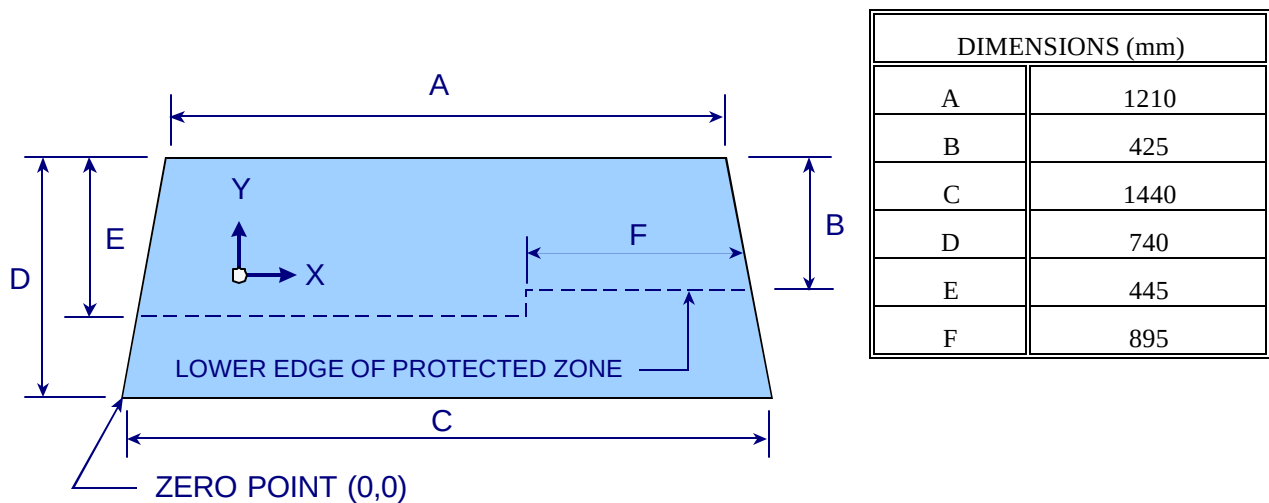
FAILURE DETAILS: None

DATA SHEET NO. 11 FMVSS NO. 219 (PARTIAL) - "WINDSHIELD ZONE INTRUSION" DATA

PROTECTED ZONE LOWER EDGE REQUIREMENT:

The lower edge of the protected zone is determined by placing a 165 mm diameter rigid sphere weighing 6.8 kg in a position such that it simultaneously contacts the inner surface of the windshield and the top surface of the instrument panel including padding. The locus of points is drawn on the inner surface of the windshield contacted by the sphere across the width of the instrument panel. From the outermost contactable points extend the locus line horizontally to the edges of the windshield, then draw a line on the inner surface of the windshield below and 13 mm distant from the locus line. The LOWER EDGE OF THE PROTECTED ZONE is the longitudinal projection of this line onto the outer surface of the windshield.

FMVSS 219 TEST DATA:



FRONT VIEW OF WINDSHIELD

DETAILS OF WINDSHIELD GLASS PENETRATION GREATER THAN 6 mm: None

(Show location of penetration on the above sketch)

COORDINATES		
	X	Y
1.	-	-
2.	-	-
3.	-	-
4.	-	-

DATA SHEET NO. 12 FMVSS NO. 301-75 "FUEL SYSTEM INTEGRITY" POST IMPACT TEST DATA

NHTSA TEST No.:

M40103

TEST DATE:

January 29, 2004

VEHICLE MAKE/MODEL:

2004 Chevrolet Colorado 4-Door Pickup

The test vehicle was filled from 92% to 94% of the manufacture's "usable" capacity. The electric fuel pump was operating if it will operate without engine operation. Two Part 572 anthropomorphic test devices were located at each of the front designated seating positions.

=====

TEST VEHICLE IMPACT TYPE:

X

Frontal (56 kph)

Oblique (48 kph) with _____ deg. barrier face first
contacting _____

-

(driver/passenger) side

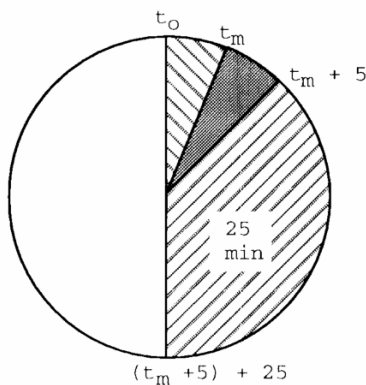
-

Rear Moving Barrier (48 kph)

-

Lateral Moving Barrier (32 kph)

FUEL SPILLAGE MEASUREMENT:



1. From impact until vehicle motion ceases

2. For 5 minute period after vehicle motion ceases

3. For next 25 minutes

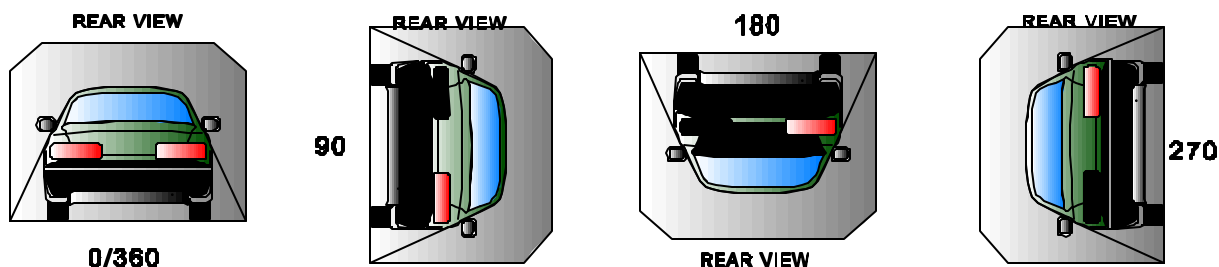
ACTUAL	MAX ALLOWED
0	28 g
0	141 g
0	28 g/min.

SOLVENT SPILLAGE DETAILS: None

DATA SHEET NO. 13 - ROLLOVER DATA

Vehicle: 2004 Chevrolet Colorado 4-Door Pickup

NHTSA No.: M40103



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Stage	Rotation Time (spec. 1 -3 min)				FMVSS 301 Hold Time		Total Time				Next Whole Minute Interval	
0° - 90°	1	minutes	20	seconds	5	minutes	6	minutes	20	seconds	7	minutes
90° - 180°	1	minutes	11	seconds	5	minutes	6	minutes	11	seconds	7	minutes
180°-270°	1	minutes	06	seconds	5	minutes	6	minutes	6	seconds	7	minutes
270°-360°	1	minutes	13	seconds	5	minutes	6	minutes	13	seconds	7	minutes

II. FMVSS 301 REQUIREMENTS: (Maximum allowable solvent spillage):

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
142 g	28 g	28 g	28 g

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

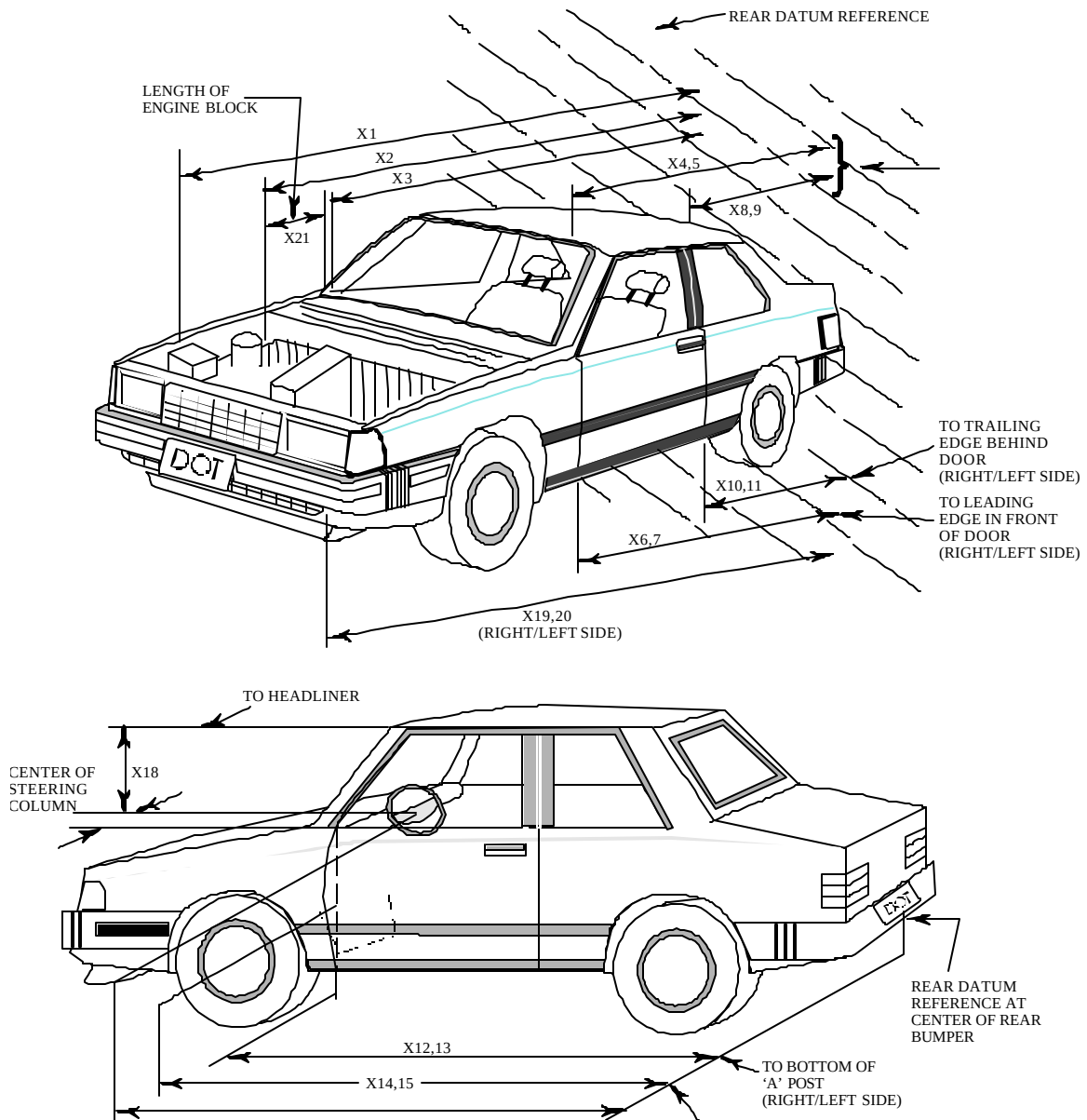
Rollover Stage	First 5 minutes from onset of rotation (g)	6th min. (g)	7th min. (g)	8th min. (if required) (g)
0° - 90°	0	0	0	N/A
90° - 180°	0	0	0	N/A
180°-270°	0	0	0	N/A
270°-360°	0	0	0	N/A

Note: Record spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATION(S):

Rollover Stage	Spillage Location
0° - 90°	None
90° - 180°	None
180°-270°	None
270°-360°	None

DATA SHEET NO. 14 TEST VEHICLE MEASUREMENTS

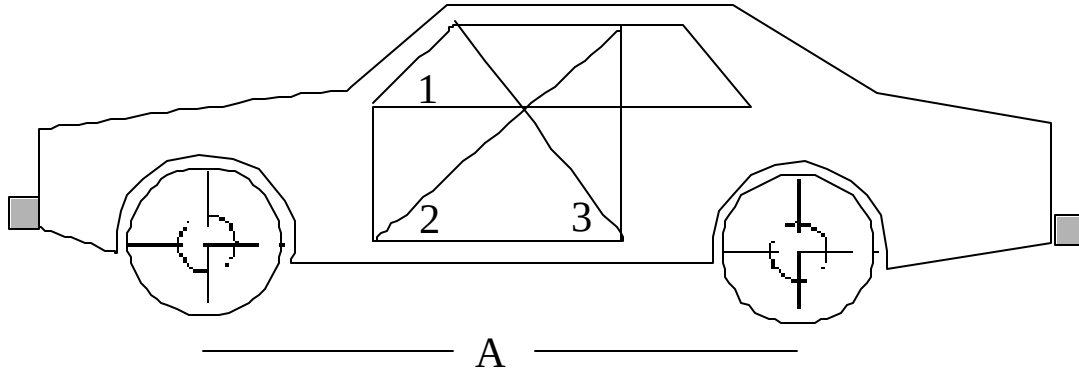


DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)

No.		Pre-Test	Post-Test	Difference
X1	Total Length of Vehicle at Centerline	5265	4745	520
X2	Rear Surface of Vehicle to Front of Engine	4715	4544	171
X3	Rear Surface of Vehicle to Firewall	4116	4068	48
X4	Rear Surface of Vehicle to Upper Leading Edge of Right Door	3867	3846	21
X5	Rear Surface of Vehicle to Upper Leading Edge of Left Door	3866	3859	7
X6	Rear Surface of Vehicle to Lower Leading Edge of Right Door	3845	3816	29
X7	Rear Surface of Vehicle to Lower Leading Edge of Left Door	3837	3843	-6
X8	Rear Surface of Vehicle to Upper Trailing Edge of Right Door	2702	2680	22
X9	Rear Surface of Vehicle to Upper Trailing Edge of Left Door	2700	2694	6
X10	Rear Surface of Vehicle to Lower Trailing Edge of Right Door	2701	2681	20
X11	Rear Surface of Vehicle to Lower Trailing Edge of Left Door	2705	2704	1
X12	Rear Surface of Vehicle to Bottom of "A" Post of Right Side	3842	3824	18
X13	Rear Surface of Vehicle to Bottom of "A" Post of Left Side	3842	3829	13
X14	Rear Surface of Vehicle to Firewall, Right Side	4095	3952	143
X15	Rear Surface of Vehicle to Firewall, Left Side	4092	4071	21
X16	Rear Surface of Vehicle to Steering Column	3406	3363	43
X17	Center of Steering Column to "A" Post	276	239	37
X18	Center of Steering Column to Headliner	446	424	22
X19	Rear Surface of Vehicle to Right Side of Front Bumper	5196	4745	451
X20	Rear Surface of Vehicle to Left Side of Front Bumper	5191	4761	430
X21	Length of Engine Block	532	532	0
RD	Rear Surface of Vehicle to Right Side of Dash Panel	3582	3567	15
CD	Rear Surface of Vehicle to Center of Dash Panel	3681	3650	31
LD	Rear Surface of Vehicle to Left Side of Dash Panel	3585	3572	13

All Dimensions in mm

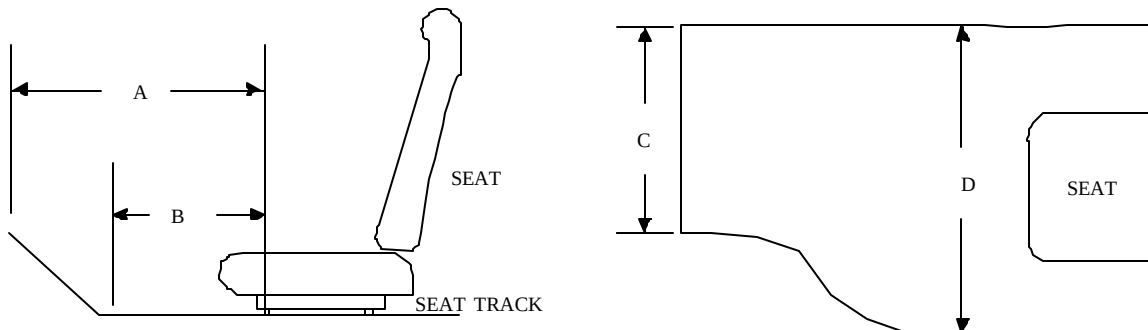
DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)
 VEHICLE INTRUSION MEASUREMENTS
 DOOR OPENING WIDTH



UNITS (mm)	LEFT			RIGHT		
MEASUREMENT	1	2	3	1	2	3
BEFORE TEST	1106	1501	1133	1110	1506	1134
AFTER TEST	1073	1492	1148	1085	1499	1159
DIFFERENCE	33	9	-15	25	7	-25

UNITS (mm)	A = WHEELBASE LEFT	A = WHEELBASE RIGHT
BEFORE TEST	3200	3200
AFTER TEST	3145	3116
DIFFERENCE	55	84

DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)
 VEHICLE INTRUSION MEASUREMENTS
 STATIC FOOTWELL DEFORMATION



DRIVER

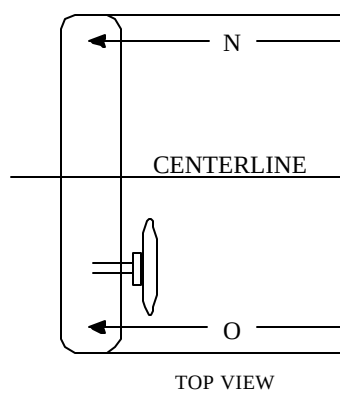
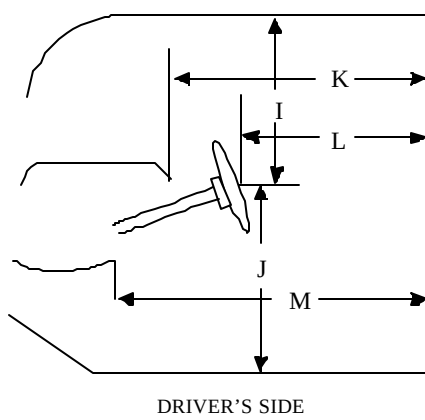
Measurement	Pre-Test	Post-Test	Difference
A	712	690	22
B	649	642	7
C	419	413	6
D	414	415	-1

PASSENGER

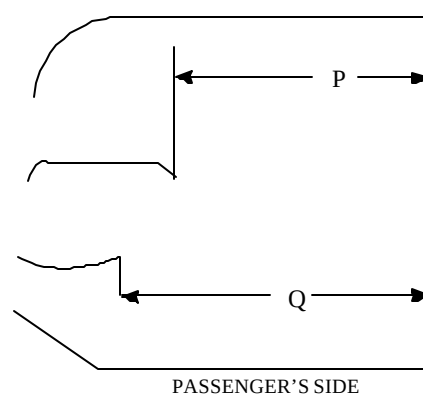
Measurement	Pre-Test	Post-Test	Difference
A	713	691	22
B	604	598	6
C	347	341	6
D	438	420	18

Units = mm

DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)
 VEHICLE INTRUSION MEASUREMENTS
 STATIC PASSENGER COMPARTMENT INTRUSION



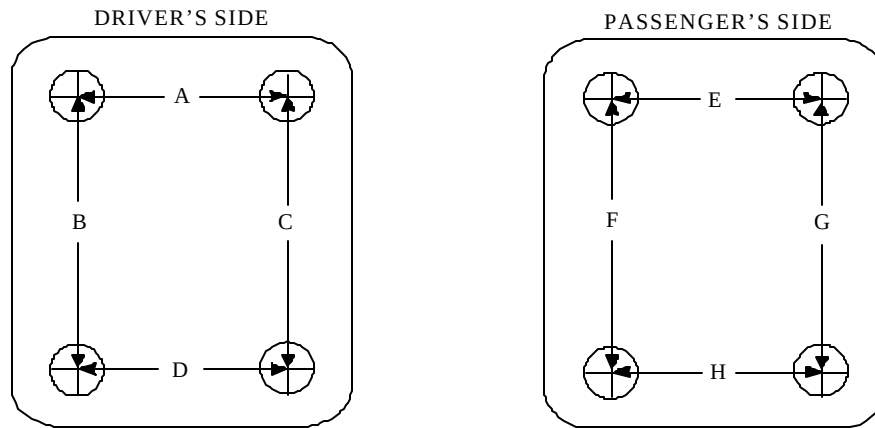
MEASUREMENTS
FROM C-PILLAR
BELT ANCHORAGE



Measurement	Pre-Test	Post-Test	Difference
I	446	424	22
J	638	690	-52
K	1685	1673	12
L	1476	1440	36
M	1693	1712	-19
N	1651	1654	-3
O	1655	1649	6
P = K (PASS.)	1610	1618	-8
Q = M (PASS.)	1701	1684	17

Units = mm

DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)
FLOORBOARD DEFORMATION

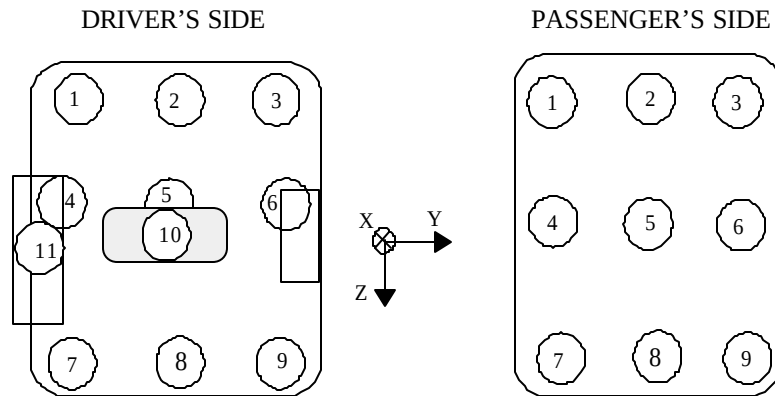


TOP VIEW THROUGH FLOOR PAN

Measurement	Pre-Test	Post-Test	Difference
A	419	413	6
B	474	476	-2
C	490	480	10
D	414	415	-2
E	347	341	6
F	462	459	3
G	457	469	-12
H	438	420	18

Units = mm

DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)
TOE-PAN INTRUSION



Driver Side Toe-pan Measurements

Toe-pan Location	X Deformation (mm)			Z Deformation (mm)		
	Pre-Test	Post-Test	Difference	Pre-Test	Post-Test	Difference
1	4060	4032	28	-540	-535	-5
2	4048	4026	22	-524	-535	11
3	4021	3960	61	-515	-538	23
4	4004	3995	9	-452	-454	2
5	4041	4019	22	-434	-442	8
6	4016	3972	44	-433	-439	6
7	3967	3962	5	-358	-366	8
8	3985	3978	7	-345	-354	9
9	3940	3935	5	-337	-351	14
10	3854	3810	44	-456	-470	14
11	3958	3947	11	-466	-464	-2

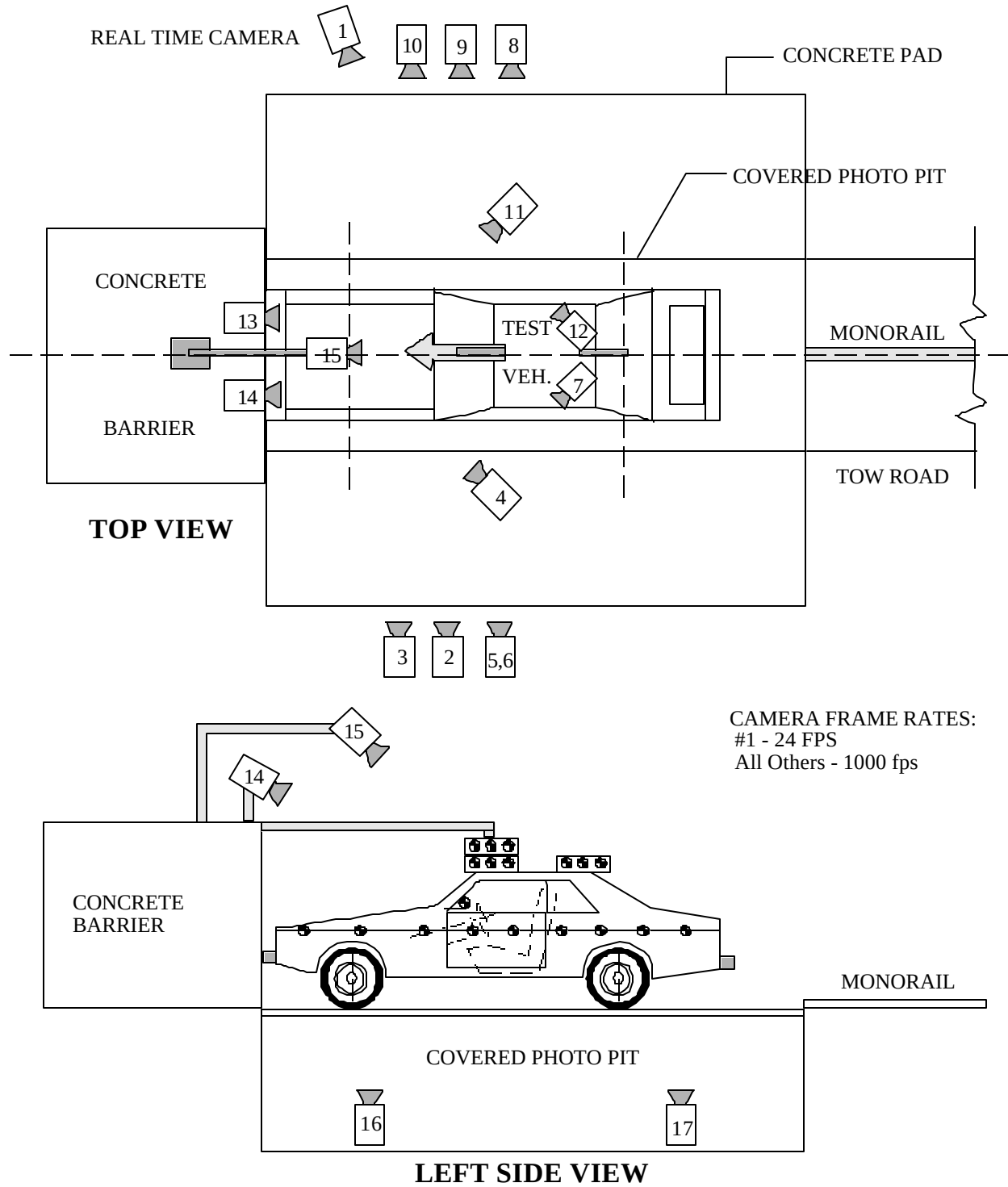
Passenger Side Toe-pan Measurements

Toe-pan Location	X Deformation (mm)			Z Deformation (mm)		
	Pre-Test	Post-Test	Difference	Pre-Test	Post-Test	Difference
1	4036	3981	55	-484	-473	-11
2	4056	4014	42	-467	-464	-3
3	4029	4002	27	-498	-491	-7
4	3999	3954	45	-412	-404	-8
5	4010	3980	30	-386	-371	-15
6	3989	3964	25	-410	-399	-11
7	3928	3901	27	-331	-328	-3
8	3946	3921	25	-315	-302	-13
9	3951	3937	14	-323	-312	-11

Reference: SAE: X = Rear Bumper (Positive: forward); Z = Ground (Positive: down)

DATA SHEET NO.15 HIGH-SPEED CAMERA LOCATIONS

NOTE: Camera information shown in DATA SHEET NO. 15.



DATA SHEET NO.15 HIGH-SPEED CAMERA LOCATIONS (cont.)

NHTSA Test No.: M40103 Vehicle: 2004 Chevrolet Colorado 4-Door Pickup

CAMERA NO.	VIEW	CAMERA POSITIONS (mm)*			ANGLE (deg)**	FILM PLANE TO HEAD TARGET	LENS (mm)	SPEED (fps)
		X	Y	Z				
1	Real-Time Camera	-	-	-	-	-	-	24
2	Overall Left Side	7159	1844	1096	-3	6712	12.5	1020
3	Left Side View	8176	1010	1111	-2	7729	25	1020
4	Driver and Interior View	7292	2131	2007	-8	-	25	1055
5	Steering Column (Bottom)	7620	1519	1177	-2	7173	25	1030
6	Steering Column (Top)	7620	1519	1777	-7	7173	25	1035
7	Left Side CRS View	3658	2833	2572	-17	-	24-70	1000
8	Overall Right Side	7258	2206	1060	-4	7513	12.5	1030
9	Right Side View	8373	1279	1201	-3	8628	25	1005
10	Right Passenger View	8267	1867	1316	0	8522	35	1025
11	Passenger and Interior View	7269	1897	1981	-6	-	25	1005
12	Right Side CRS View	3665	2843	2613	-16	-	24-70	1000
13	Passenger Front View	620	-92	1987	-27	-	13	1035
14	Driver Front View	620	-92	1987	-31	-	13	1030
15	Windshield View	0	-530	3374	-51	-	13	1020
16	Pit View of Engine	0	615	-3048	90	-	13	1005
17	Pit View of Fuel Tank	0	2953	-3048	90	-	13	1000

*X = film plane to monorail centerline ** = referenced to horizontal plane

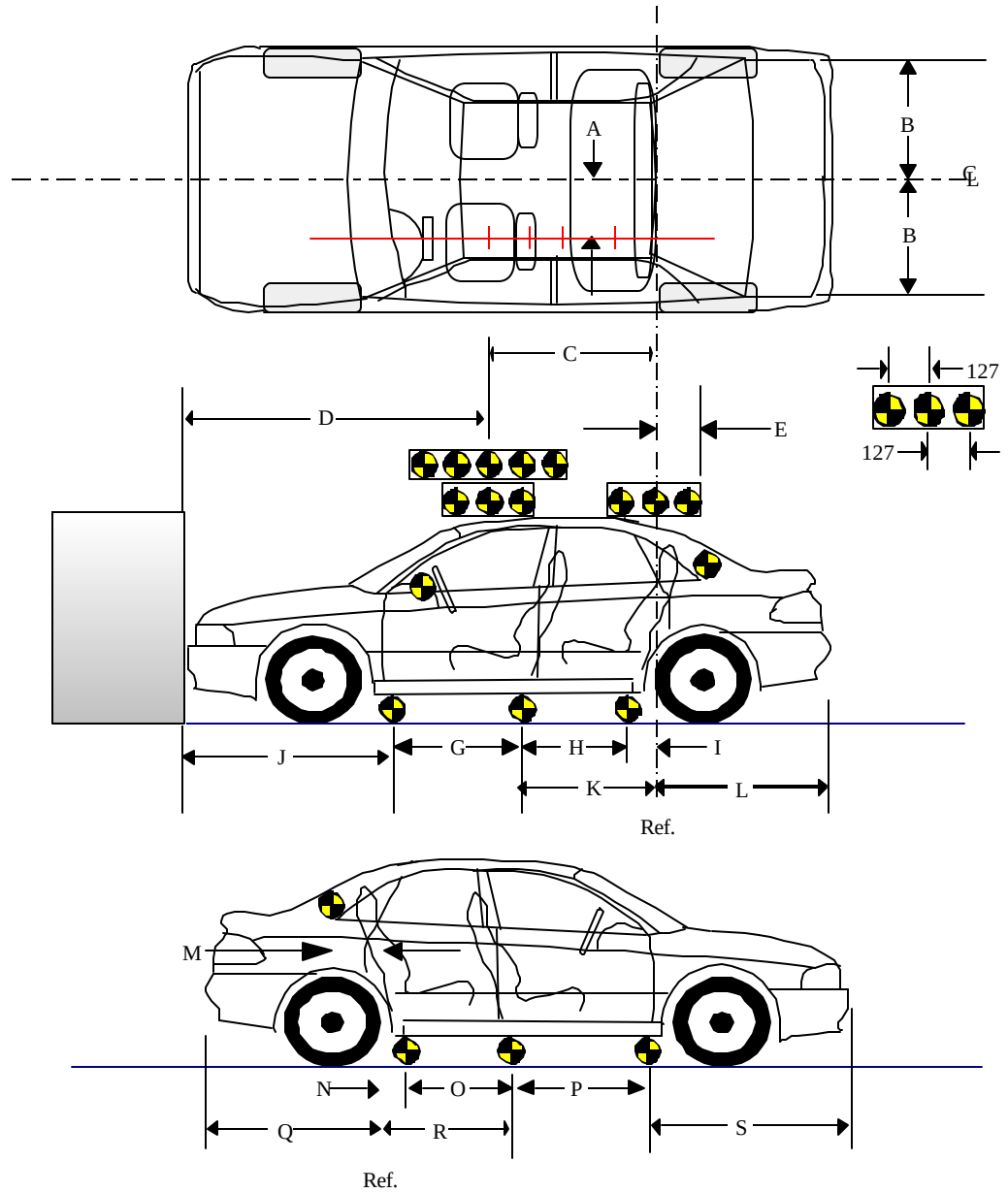
Y = film plane to impact location N.T. indicates No Timing

Z = film plane to ground

DATA SHEET NO. 16 VEHICLE REFERENCE PHOTO TARGET LOCATIONS

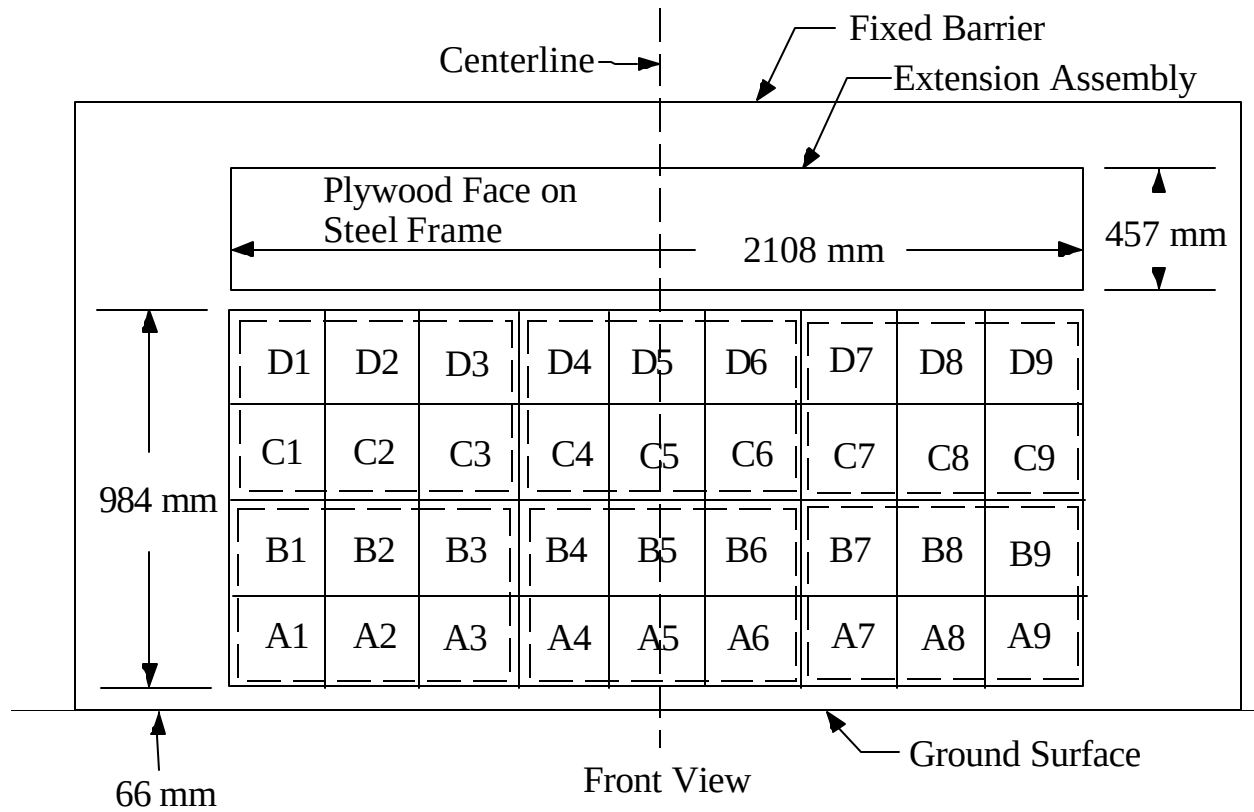
(Dimensions in millimeters)

A	331
B	702
C	1220
D	2054
E	817
F	1538
G	977
H	884
I	318
J	1515
K	1202
L	1591
M	791
N	306
O	942
P	921
Q	1599
R	1248
S	1517



DATA SHEET NO. 17 LOAD CELL LOCATIONS ON FIXED BARRIER

36 Load Cells
 4 Rows
 9 Columns
 6 Groupings (6 cells/group)



6 GROUPS OF 6 LOAD CELLS EACH

Group 4 C1 thru D3	Group 5 C4 thru D6	Group 6 C7 thru D9
Group 1 A1 thru B3	Group 2 A4 thru B6	Group 3 A7 thru B9

The following data is presented in Appendix B:

- (1)Data from 36 individual load cells
- (2)Total or Sum of 36 individual load cells
- (3)Data from 6 Groupings shown above (6 cells/group)

DATA SHEET NO. 18 POST TEST AIR BAG DATA

NHTSA No.: M40103; Test Date: January 29, 2004; Technician: P. MacDiarmid

Vehicle Model Year/Make/Model: 2004 Chevrolet Colorado 4-Door Pickup

A. No. of vent holes: 2 -Driver 2 -Passenger

B. Size of vent holes: (mm²) 491 -Driver 1257 -Passenger

C. Total vent area: (mm²) 982 -Driver 2514 -Passenger

D. Deflated air bag length and width dimensions or, if round, diameter. (mm)

Driver: 520 -Height; 650 -Width; 460 -Depth

Passenger: 700 -Height; 400 -Width; 700 -Depth

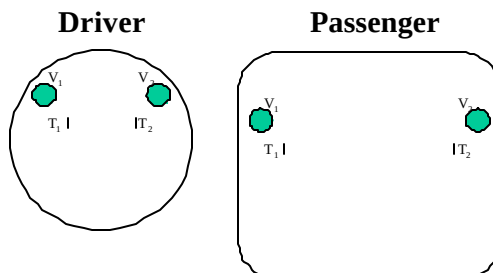
E. Is the air bag tethered?

Driver: X -Yes; - -No; If yes, record length of tether- 300

Passenger: X -Yes; - -No; If yes, record length of tether- 500

Sketch the air bag showing the location of the vent holes, how the bag is tethered, and where the bag is tethered. Also describe how the tethers are attached to the bag and the steering wheel.

(Note: Not to scale; V_n = Vent hole_n, T_n = Tether_n).



F. Record part numbers and manufacturer name of the air bag and gas generator.

Driver: Air bag: Breed Technologies (Made in Mexico) TB8532670034-02

Generator: 1PG264304

Passenger: Air bag: 600600700DD05 G4XP9G04CYI 189

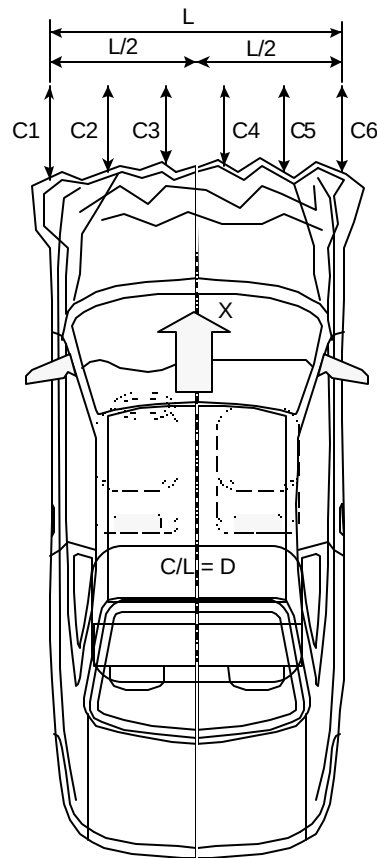
Generator: 435287212 029801B 601331400CMAP0003887 Y196906011020

DATA SHEET NO. 19 ACCIDENT INVESTIGATION DIVISION DATA
FOR FRONTAL BARRIER IMPACT

Vehicle Make/Model/Body Style: Chevrolet Colorado 4-Door Pickup
 NHTSA Test No.: M40103 VIN: 1GCDS136148104733
 Model Year: 2004 Build Date: 11/03 Test Date: January 29, 2004
 Vehicle Size Category: Pick-up Test Weight: 2104.5 kg
 Vehicle Wheelbase: 3200 mm; Front Overhang: 877 mm; Overall Width: 1742 mm
 Collision Deformation Classification (CDC) Code: 12FDEW 3

Crush Depth Dimensions

	PRE (mm)	POST (mm)	DIFF (mm)
C1 =	5098	4700	398
C2 =	5221	4770	451
C3 =	5261	4757	504
C4 =	5262	4756	506
C5 =	5226	4757	469
C6 =	5103	4681	422



Midpoint of Damage: $D = \text{Vehicle Centerline (Longitudinal)}$

Length of Damaged Region: L1= 1556 mm
 L2= 778.0 mm
 L5= 311.2 mm

APPENDIX A
PHOTOGRAPHS

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Figure A-1 LOAD CELL LOCATIONS



Figure A-2 VEHICLE CERTIFICATION PLACARD



Figure A-3 VEHICLE TIRE PLACARD



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Figure A-4 RIGHT FRONT, AS RECEIVED



Figure A-5 LEFT REAR, AS RECEIVED



Figure A-6 PRE-TEST FRONT VIEW



Figure A-7 POST-TEST FRONT VIEW



Figure A-8 PRE-TEST LEFT SIDE VIEW



Figure A-9 POST-TEST LEFT SIDE VIEW



Figure A-10 PRE-TEST RIGHT SIDE VIEW



Figure A-11 POST-TEST RIGHT SIDE VIEW



Figure A-12 PRE-TEST RIGHT FRONT THREE-QUARTER VIEW



Figure A-13 POST-TEST RIGHT FRONT THREE-QUARTER VIEW



Figure A-14 PRE-TEST LEFT REAR THREE-QUARTER VIEW



Figure A-15 POST-TEST LEFT REAR THREE-QUARTER VIEW



Figure A-16 LEFT REAR THREE-QUARTER VIEW OF DOORS AFTER IMPACT



Figure A-17 RIGHT REAR THREE-QUARTER VIEW OF DOORS AFTER IMPACT



Figure A-18 PRE-TEST WINDSHIELD VIEW



Figure A-19 POST-TEST WINDSHIELD VIEW



Figure A-20 PRE-TEST ENGINE COMPARTMENT VIEW



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Figure A-21 POST-TEST ENGINE COMPARTMENT VIEW



Figure A-22 PRE-TEST FUEL CAP VIEW

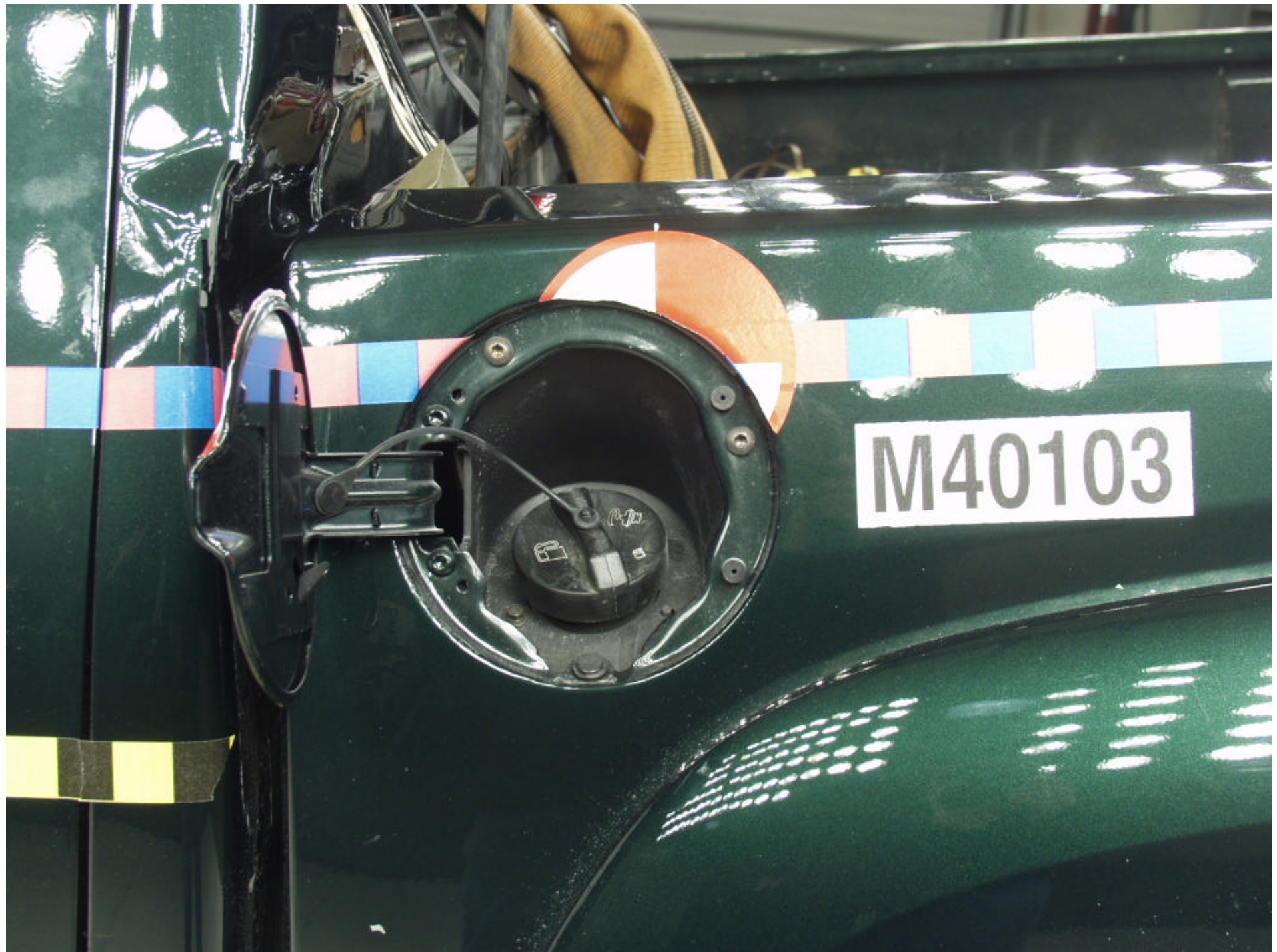


Figure A-23 POST-TEST FUEL CAP VIEW



Figure A-24 PRE-TEST FRONT UNDERBODY VIEW



Figure A-25 POST-TEST FRONT UNDERBODY VIEW

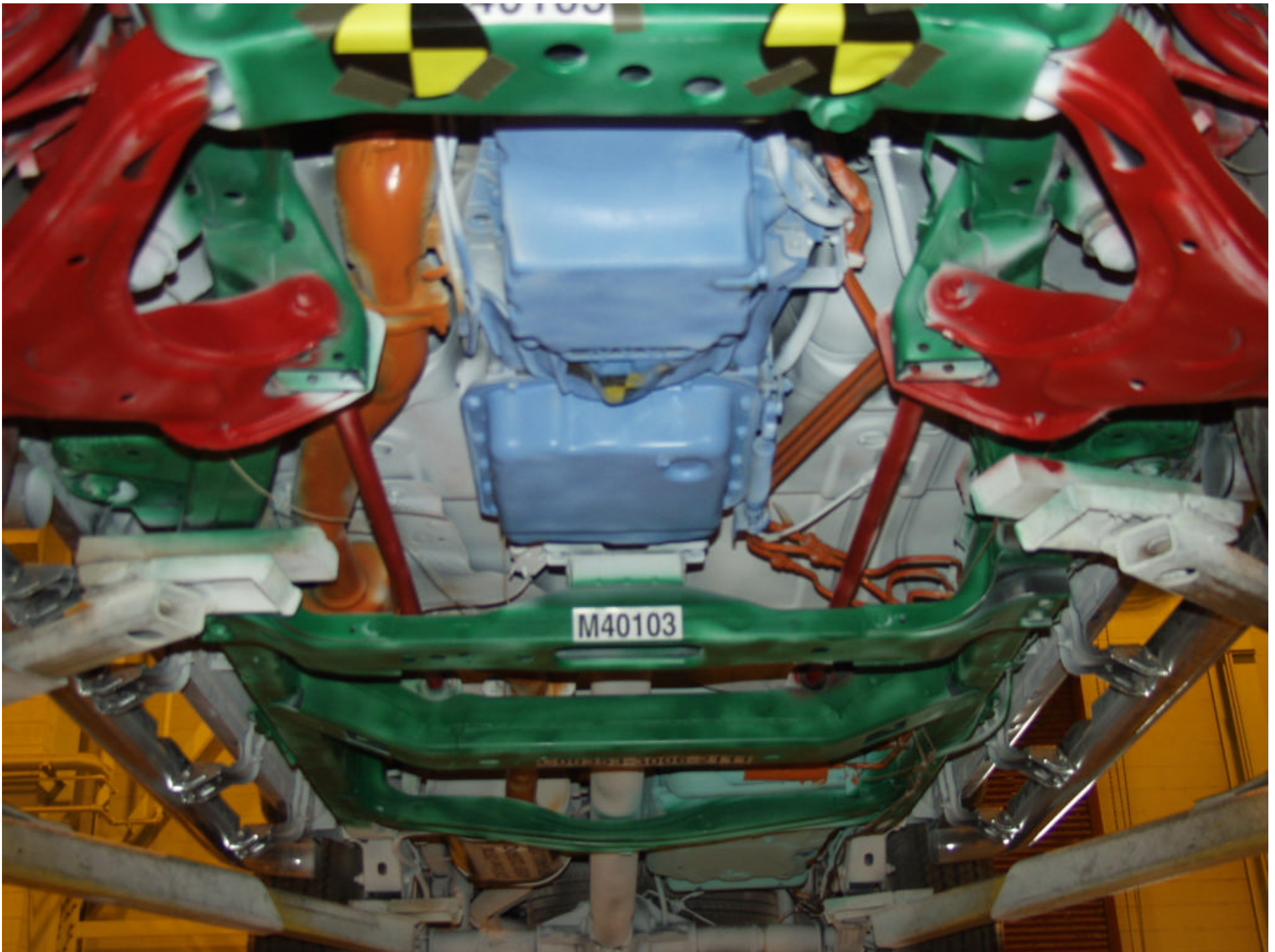


Figure A-26 PRE-TEST MID UNDERBODY VIEW

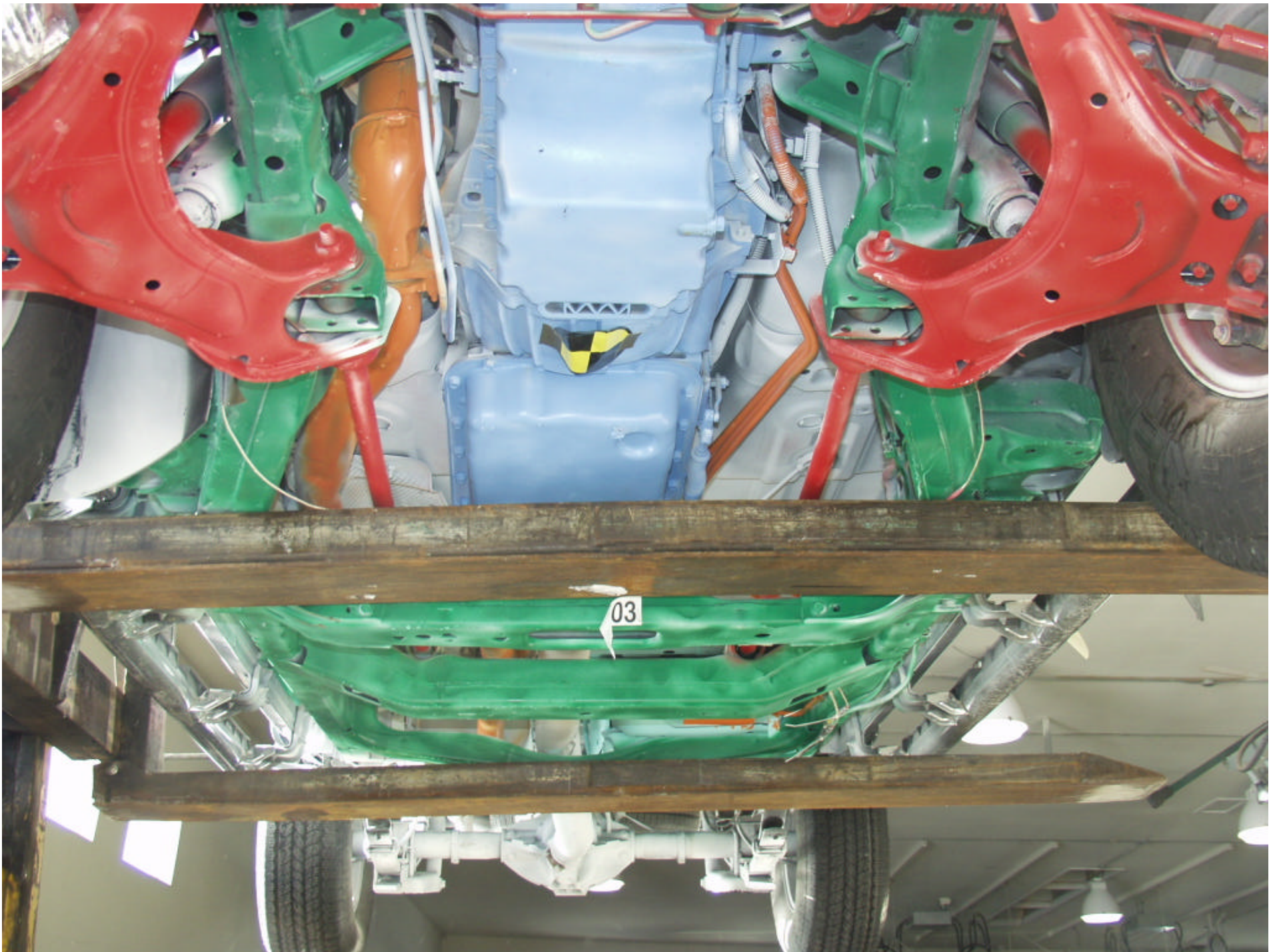


Figure A-27 POST-TEST MID UNDERBODY VIEW



Figure A-28 PRE-TEST REAR UNDERBODY VIEW



Figure A-29 POST-TEST REAR UNDERBODY VIEW



Figure A-30 PRE-TEST DRIVER HEAD LOCATION



Figure A-31 POST-TEST DRIVER HEAD LOCATION



Figure A-32 PRE-TEST DRIVER POSITION VIEW



Figure A-33 POST-TEST DRIVER POSITION VIEW



Figure A-34 PRE-TEST DRIVER AND INTERIOR VIEW



Figure A-35 POST-TEST DRIVER AND INTERIOR VIEW



Figure A-36 PRE-TEST DRIVER FEET VIEW



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Figure A-37 POST-TEST DRIVER FEET VIEW



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Figure A-38 PRE-TEST DRIVER KNEE BOLSTER VIEW



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Figure A-39 POST-TEST DRIVER KNEE BOLSTER VIEW



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Figure A-40 PRE-TEST DRIVER FLOOR PAN VIEW



Figure A-41 POST-TEST DRIVER FLOOR PAN VIEW



Figure A-42 POST-TEST DRIVER HEAD VIEW



Figure A-43 POST-TEST DRIVER CONTACT TO AIRBAG



Figure A-44 PRE-TEST PASSENGER HEAD LOCATION



Figure A-45 POST-TEST PASSENGER HEAD LOCATION



Figure A-46 PRE-TEST PASSENGER POSITION VIEW



Figure A-47 POST-TEST PASSENGER POSITION VIEW

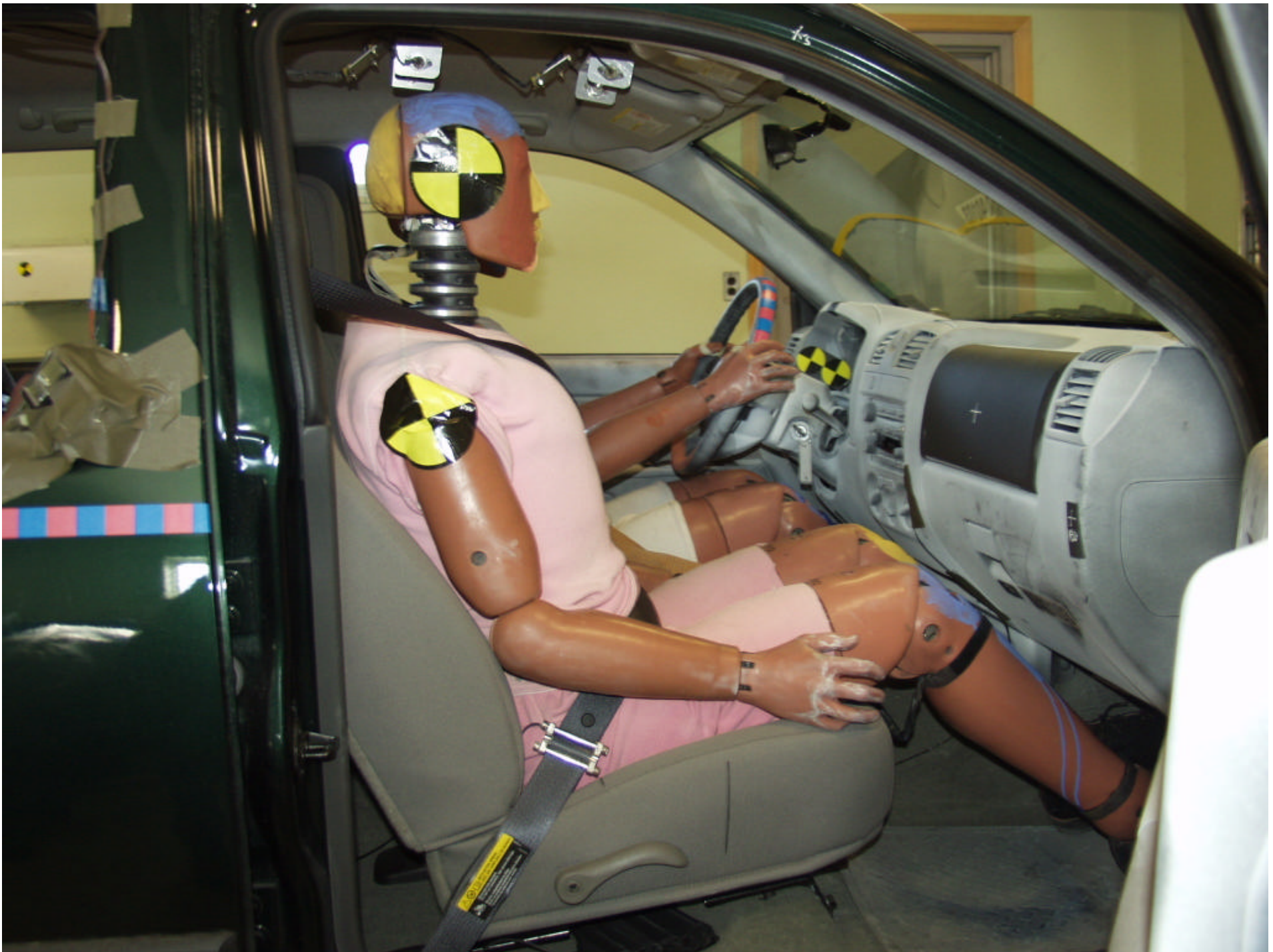


Figure A-48 PRE-TEST PASSENGER AND INTERIOR VIEW



Figure A-49 POST-TEST PASSENGER AND INTERIOR VIEW



Figure A-50 PRE- TEST PASSENGER FEET VIEW



Figure A-51 POST-TEST PASSENGER FEET VIEW



Figure A-52 PRE-TEST PASSENGER KNEE BOLSTER VIEW



Figure A-53 POST-TEST PASSENGER KNEE BOLSTER VIEW



Figure A-54 PRE-TEST PASSENGER FLOOR PAN VIEW



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Figure A-55 POST-TEST PASSENGER FLOOR PAN VIEW



Figure A-56 POST-TEST PASSENGER HEAD VIEW



Figure A-57 POST-TEST PASSENGER CONTACT TO AIRBAG



Figure A-58 ROLLOVER VIEW



Figure A-59 IMPACT VIEW

APPENDIX B

DUMMY, VEHICLE AND LOAD CELL BARRIER RESPONSE DATA

**Hybrid III Dummy Sign Conventions
Load Cells and Special Transducers**

Transducer	SAE Sign Convention (positive unless noted)
Upper Neck Load Cell	Fx Head rearward Fy Head left Fz Neck in tension Mx Left ear to left shoulder My Chin to chest (flexion) Mz Chin to left shoulder (look left)
Chest Displacement Potentiometer	Compression is negative
Pelvic Load Cell (Lower Lumbar)	Fx Chest rearward Fy Chest left Fz Spine in tension
Femur Load Cell	Compression is negative
Upper Tibia Load Cell (right and left leg)	Mx Support tibia at ends, load left side center My Support tibia at ends, load front (shin) center
Lower Tibia Load Cell (right and left leg)	Fz Tibia in tension Mx Support tibia at ends, load left side center My Support tibia at ends, load front (shin) center

DATA CHANNEL FILTER CLASS SUMMARY

NHTSA TEST NO.

DATA TYPE	SAE FILTER CLASS (Hz)
Dummy Head Accelerations	1000
Dummy Chest Accelerations	180
Dummy Chest Displacements	600
Dummy Femur Forces	600
Dummy Belt Loads	60
Dummy Belt Displacements	180
Dummy Neck Forces	1000
Dummy Neck Moments	600
Vehicle Accelerations	60
Vehicle Velocity Integrations	180
Vehicle Displacement Integrations	180
Load Cell Barrier Forces	60

Table of Data Plots

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2	V1P1 Head 9 Array X Arm Az [g, CFC_1000]	B-9
3	V1P1 Head 9 Array Y Arm Ax [g, CFC_1000]	B-10
4	V1P1 Head 9 Array Y Arm Az [g, CFC_1000]	B-11
5	V1P1 Head 9 Array Z Arm Ax [g, CFC_1000]	B-12
6	V1P1 Head 9 Array Z Arm Ay [g, CFC_1000]	B-13
7	V1P1 Head CG x [g, CFC_1000]	B-14
8	V1P1 Head CG y [g, CFC_1000]	B-15
9	V1P1 Head CG z [g, CFC_1000]	B-16
10	V1P1 Head CG Resultant [g, CFC_1000]	B-17
11	V1P1 Head CG Red x [g, CFC_1000]	B-18
12	V1P1 Head CG Red y [g, CFC_1000]	B-19
13	V1P1 Head CG Red z [g, CFC_1000]	B-20
14	V1P1 Head CG Red Resultant [g, CFC_1000]	B-21
15	V1P1 Upper Neck Fx [N, CFC_1000]	B-22
16	V1P1 Upper Neck Fy [N, CFC_1000]	B-23
17	V1P1 Upper Neck Fz [N, CFC_1000]	B-24
18	V1P1 Upper Neck F Resultant [N, CFC_1000]	B-25
19	V1P1 Upper Neck Mx [N-m, CFC_600]	B-26
20	V1P1 Upper Neck My [N-m, CFC_600]	B-27
21	V1P1 Upper Neck Mz [N-m, CFC_600]	B-28
22	V1P1 Upper Neck M Resultant [N-m, CFC_600]	B-29
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24	V1P1 Chest y [g, CFC_180]	B-31
25	V1P1 Chest z [g, CFC_180]	B-32
26	V1P1 Chest Resultant [g, CFC_180]	B-33
27	V1P1 Chest Red x [g, CFC_180]	B-34
28	V1P1 Chest Red y [g, CFC_180]	B-35
29	V1P1 Chest Red z [g, CFC_180]	B-36
30	V1P1 Chest Red Resultant [g, CFC_180]	B-37
31	V1P1 Chest Compression x [mm, CFC_600]	B-38
32	V1P1 Pelvic x [g, CFC_1000]	B-39
33	V1P1 Pelvic y [g, CFC_1000]	B-40
34	V1P1 Pelvic z [g, CFC_1000]	B-41
35	V1P1 Pelvic Resultant [g, CFC_1000]	B-42
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37	V1P1 Right Femur z [N, CFC_600]	B-44
38	V1P1 Left Upper Tibia Mx [N-m, CFC_600]	B-45
39	V1P1 Left Upper Tibia My [N-m, CFC_600]	B-46
40	V1P1 Left Lower Tibia Fz [N, CFC_600]	B-47
41	V1P1 Left Lower Tibia Mx [N-m, CFC_600]	B-48
42	V1P1 Left Lower Tibia My [N-m, CFC_600]	B-49
43	V1P1 Right Upper Tibia Mx [N-m, CFC_600]	B-50
44	V1P1 Right Upper Tibia My [N-m, CFC_600]	B-51
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50	V1P1 Left Foot Fore z [g, CFC_600]	B-57
51	V1P1 Right Foot Aft x [g, CFC_600]	B-58
52	V1P1 Right Foot Aft z [g, CFC_600]	B-59
53	V1P1 Right Foot Fore z [g, CFC_600]	B-60
54	V1P1 Lap Belt [N, CFC_60]	B-61
55	V1P2 Head 9 Array X Arm Ay [g, CFC_1000]	B-62
56	V1P2 Head 9 Array X Arm Az [g, CFC_1000]	B-63
57	V1P2 Head 9 Array Y Arm Ax [g, CFC_1000]	B-64
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64	V1P2 Head CG Resultant [g, CFC_1000]	B-71
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79	V1P2 Chest z [g, CFC_180]	B-86
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84	V1P2 Chest Red Resultant [g, CFC_180]	B-91
85	V1P2 Chest Compression x [mm, CFC_600]	B-92
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88	V1P2 Pelvic z [g, CFC_1000]	B-95
89	V1P2 Pelvic Resultant [g, CFC_1000]	B-96
90	V1P2 Left Femur z [N, CFC_600]	B-97
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98	V1P2 Right Upper Tibia My [N-m, CFC_600]	B-105
99	V1P2 Right Lower Tibia Fz [N, CFC_600]	B-106
100	V1P2 Right Lower Tibia Mx [N-m, CFC_600]	B-107
101	V1P2 Right Lower Tibia My [N-m, CFC_600]	B-108
102	V1P2 Left Foot Aft x [g, CFC_600]	B-109
103	V1P2 Left Foot Aft z [g, CFC_600]	B-110
104	V1P2 Left Foot Fore z [g, CFC_600]	B-111
105	V1P2 Right Foot Aft x [g, CFC_600]	B-112
106	V1P2 Right Foot Aft z [g, CFC_600]	B-113
107	V1P2 Right Foot Fore z [g, CFC_600]	B-114
108	V1P2 Lap Belt [N, CFC_60]	B-115
109	V1 Left Rear #1x [g, CFC_60]	B-116
110	V1 Left Rear #1x Velocity [kph, CFC_180]	B-117
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113	V1 Right Rear #2x Velocity [kph, CFC_180]	B-120
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115	V1 Engine Top #3x [g, CFC_60]	B-122
116	V1 Engine Top #3x Velocity [kph, CFC_180]	B-123
117	V1 Engine Top #3x Displacement [mm, CFC_180]	B-124
118	V1 Engine Bottom #4x [g, CFC_60]	B-125
119	V1 Engine Bottom #4x Velocity [kph, CFC_180]	B-126
120	V1 Engine Bottom #4x Displacement [mm, CFC_180]	B-127
121	V1 Right Caliper #5x [g, CFC_60]	B-128
122	V1 Right Caliper #5x Velocity [kph, CFC_180]	B-129
123	V1 Right Caliper #5x Displacement [mm, CFC_180]	B-130
124	V1 Instrument Panel #6x [g, CFC_60]	B-131
125	V1 Instrument Panel #6x Velocity [kph, CFC_180]	B-132
126	V1 Instrument Panel #6x Displacement [mm, CFC_180]	B-133
127	V1 Left Caliper #7x [g, CFC_60]	B-134
128	V1 Left Caliper #7x Velocity [kph, CFC_180]	B-135
129	V1 Left Caliper #7x Displacement [mm, CFC_180]	B-136
130	V1 Left Rear #8z [g, CFC_60]	B-137
131	V1 Left Rear #8z Velocity [kph, CFC_180]	B-138
132	V1 Left Rear #8z Displacement [mm, CFC_180]	B-139
133	V1 Right Rear #9z [g, CFC_60]	B-140
134	V1 Right Rear #9z Velocity [kph, CFC_180]	B-141
135	V1 Right Rear #9z Displacement [mm, CFC_180]	B-142
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138	Barrier Load Cell A3 Fx [N, CFC_60]	B-145

Table of Data Plots (Continued)

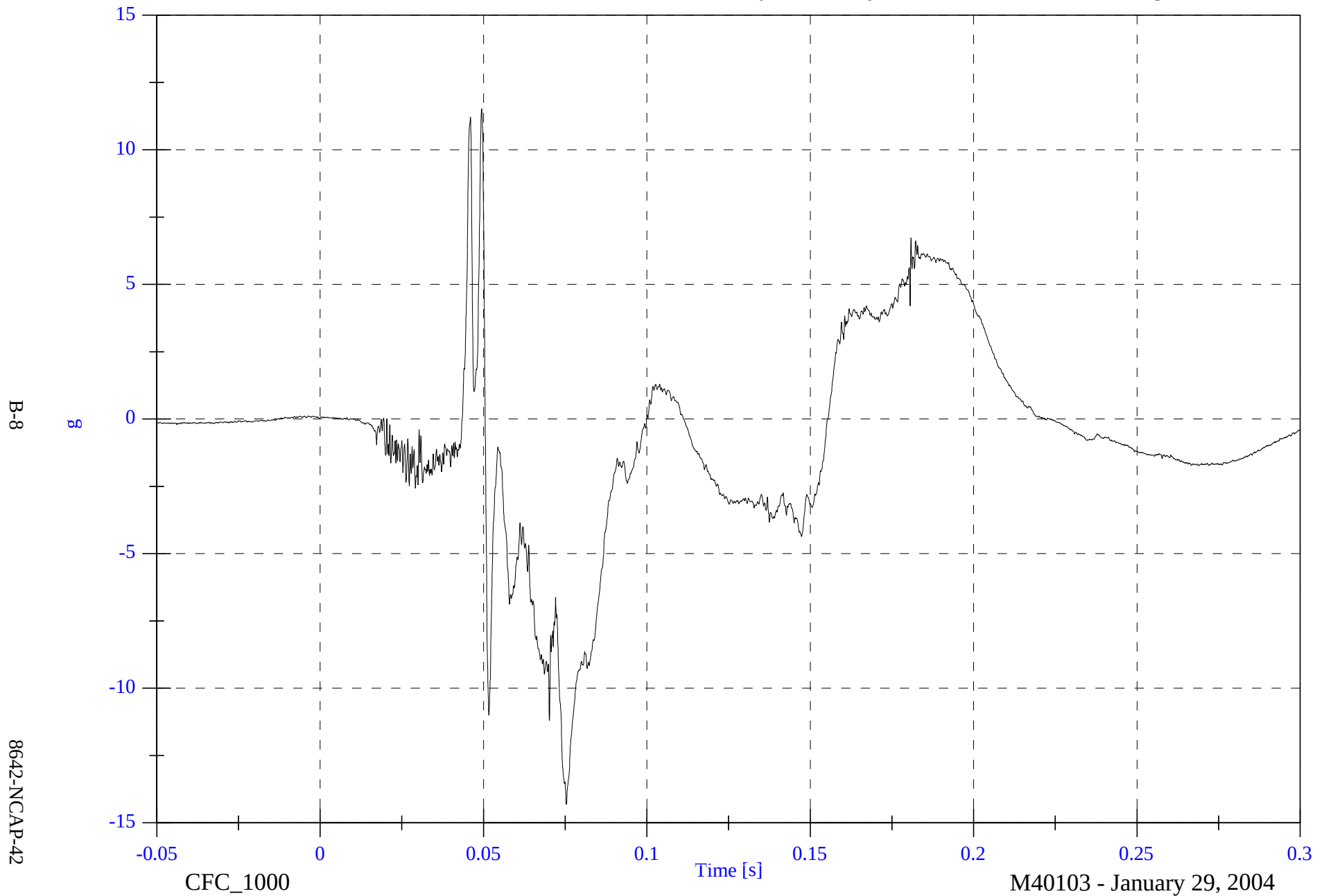
PLOT	PLOT NAME[UNITS, CHANNEL FILTER CLASS]	PAGE
139	Barrier Load Cell A4 Fx [N, CFC_60]	B-146
140	Barrier Load Cell A5 Fx [N, CFC_60]	B-147
141	Barrier Load Cell A6 Fx [N, CFC_60]	B-148
142	Barrier Load Cell A7 Fx [N, CFC_60]	B-149
143	Barrier Load Cell A8 Fx [N, CFC_60]	B-150
144	Barrier Load Cell A9 Fx [N, CFC_60]	B-151
145	Barrier Load Cell B1 Fx [N, CFC_60]	B-152
146	Barrier Load Cell B2 Fx [N, CFC_60]	B-153
147	Barrier Load Cell B3 Fx [N, CFC_60]	B-154
148	Barrier Load Cell B4 Fx [N, CFC_60]	B-155
149	Barrier Load Cell B5 Fx [N, CFC_60]	B-156
150	Barrier Load Cell B6 Fx [N, CFC_60]	B-157
151	Barrier Load Cell B7 Fx [N, CFC_60]	B-158
152	Barrier Load Cell B8 Fx [N, CFC_60]	B-159
153	Barrier Load Cell B9 Fx [N, CFC_60]	B-160
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155	Barrier Load Cell C2 Fx [N, CFC_60]	B-162
156	Barrier Load Cell C3 Fx [N, CFC_60]	B-163
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158	Barrier Load Cell C5 Fx [N, CFC_60]	B-165
159	Barrier Load Cell C6 Fx [N, CFC_60]	B-166
160	Barrier Load Cell C7 Fx [N, CFC_60]	B-167
161	Barrier Load Cell C8 Fx [N, CFC_60]	B-168
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163	Barrier Load Cell D1 Fx [N, CFC_60]	B-170
164	Barrier Load Cell D2 Fx [N, CFC_60]	B-171
165	Barrier Load Cell D3 Fx [N, CFC_60]	B-172
166	Barrier Load Cell D4 Fx [N, CFC_60]	B-173
167	Barrier Load Cell D5 Fx [N, CFC_60]	B-174
168	Barrier Load Cell D6 Fx [N, CFC_60]	B-175
169	Barrier Load Cell D7 Fx [N, CFC_60]	B-176
170	Barrier Load Cell D8 Fx [N, CFC_60]	B-177
171	Barrier Load Cell D9 Fx [N, CFC_60]	B-178
172	Group 1 Load Cell Sum (A1,A2,A3,B1,B2,B3)	B-179
173	Group 2 Load Cell Sum (A4,A5,A6,B4,B5,B6)	B-180
174	Group 3 Load Cell Sum (A7,A8,A9,B7,B8,B9)	B-181
175	Group 4 Load Cell Sum (C1,C2,C3,D1,D2,D3)	B-182
176	Group 5 Load Cell Sum (C4,C5,C6,D4,D5,D6)	B-183
177	Group 6 Load Cell Sum (C7,C8,C9,D7,D8,D9)	B-184
178	Total Load Cell Sum (All 6 Groups)	B-185

2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Head 9 Array X Arm Ay

Max: 11.5 [g] at 0.049 [s]

Min: -14.3 [g] at 0.075 [s]

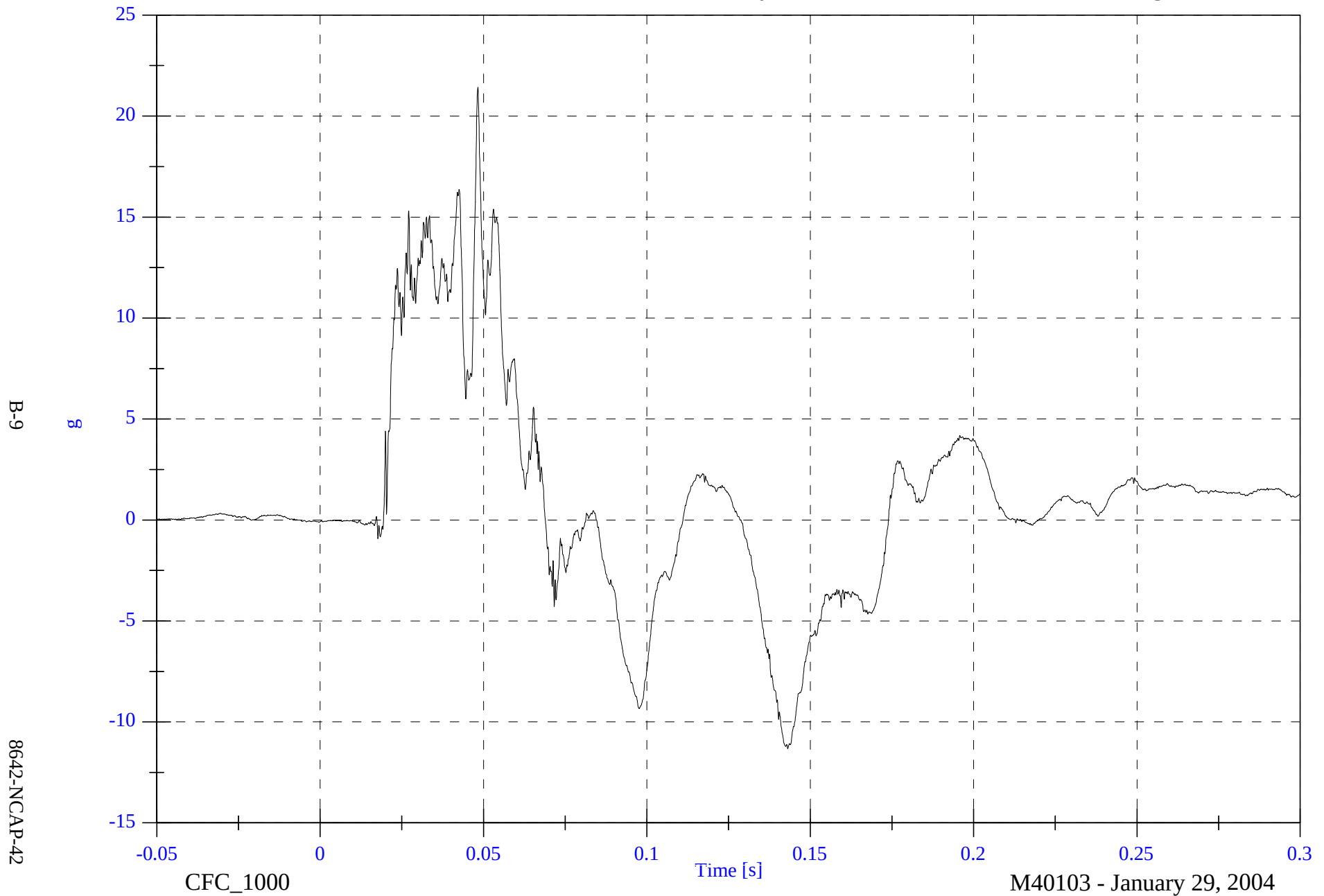


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Head 9 Array X Arm Az

Max: 21.4 [g] at 0.048 [s]

Min: -11.3 [g] at 0.143 [s]

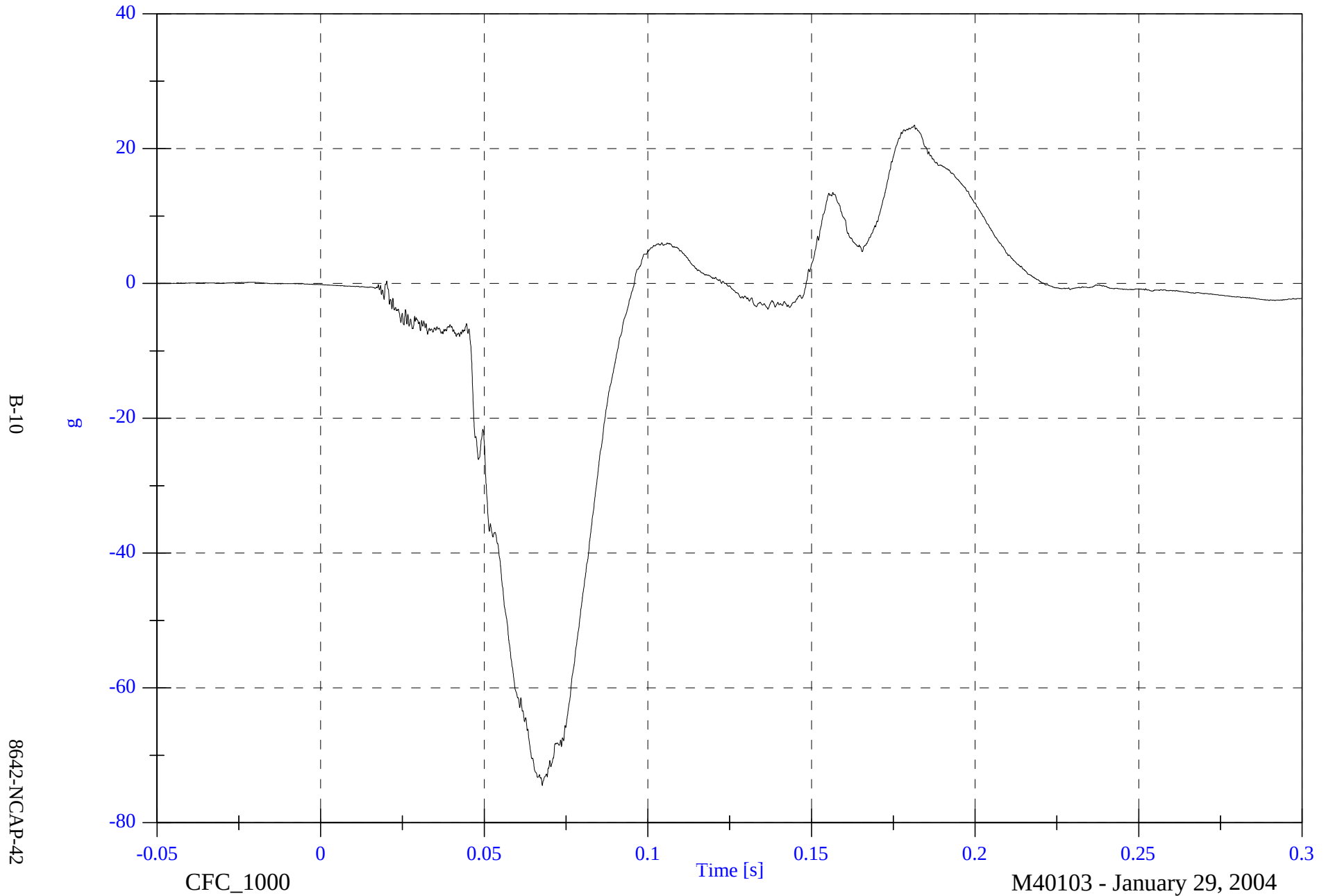


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Head 9 Array Y Arm Ax

Max: 23.5 [g] at 0.181 [s]

Min: -74.5 [g] at 0.068 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

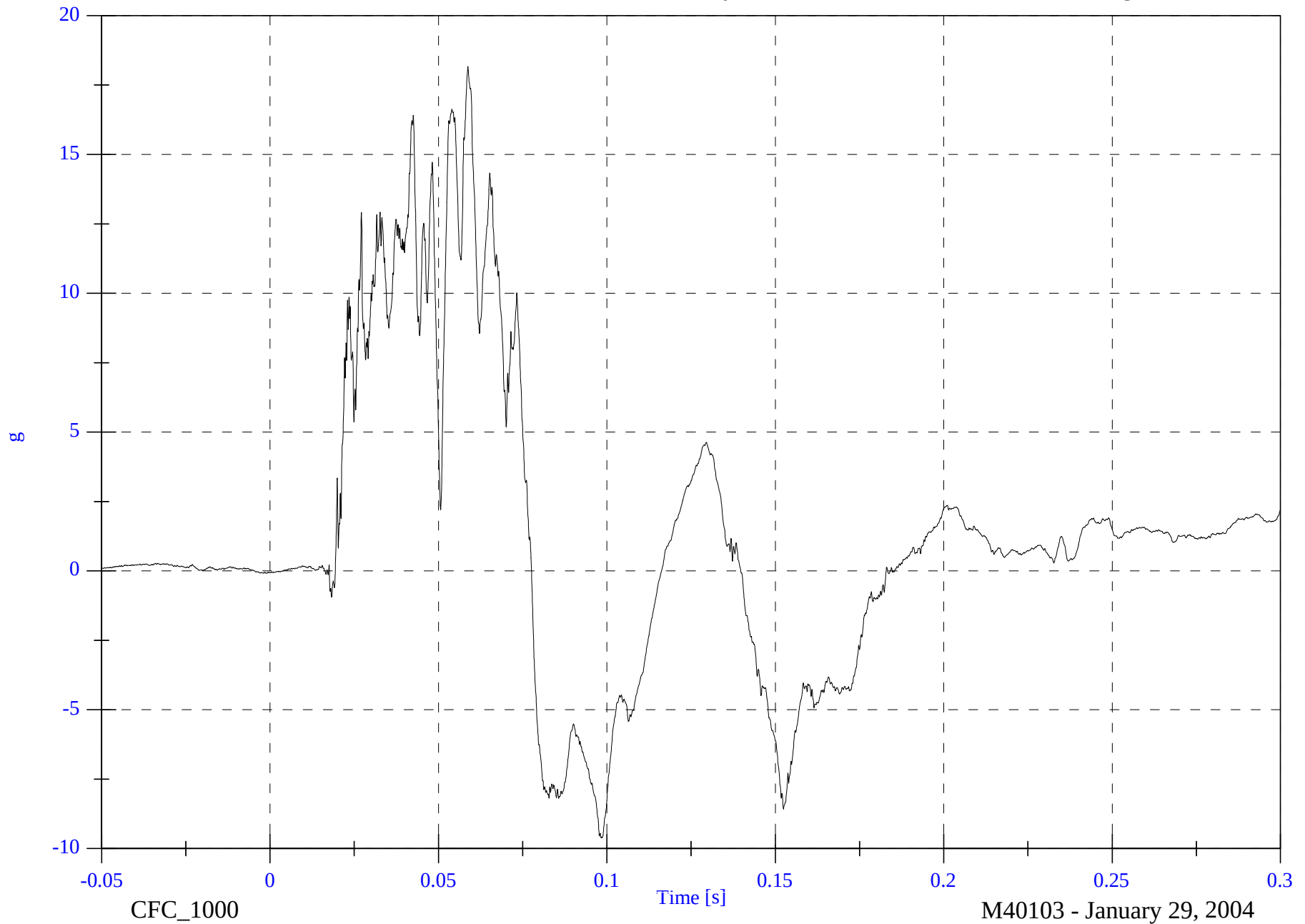
V1P1 Head 9 Array Y Arm Az

Max: 18.2 [g] at 0.059 [s]

Min: -9.6 [g] at 0.098 [s]

B-11

8642-NCAP-42

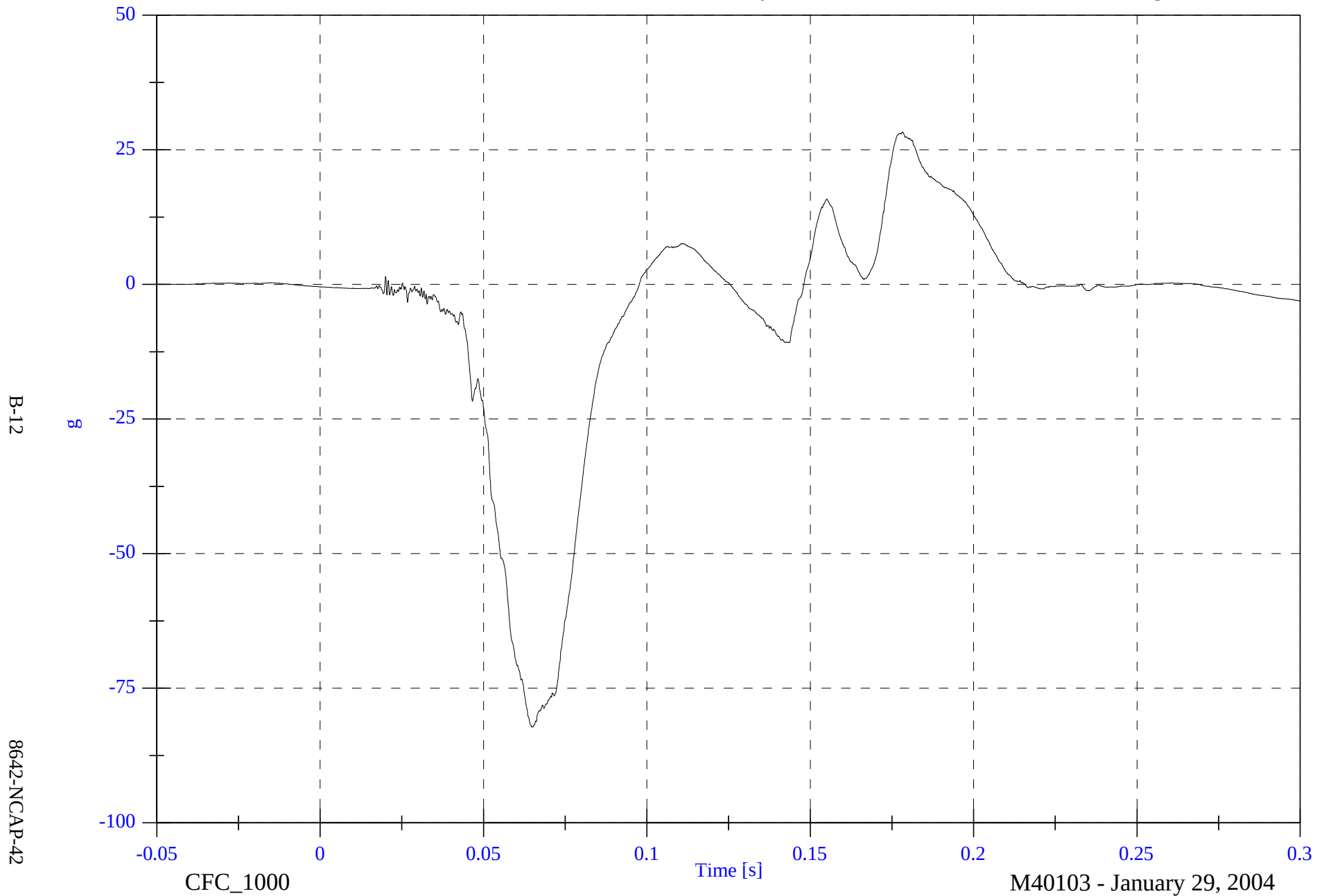


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Head 9 Array Z Arm Ax

Max: 28.3 [g] at 0.178 [s]

Min: -82.2 [g] at 0.065 [s]

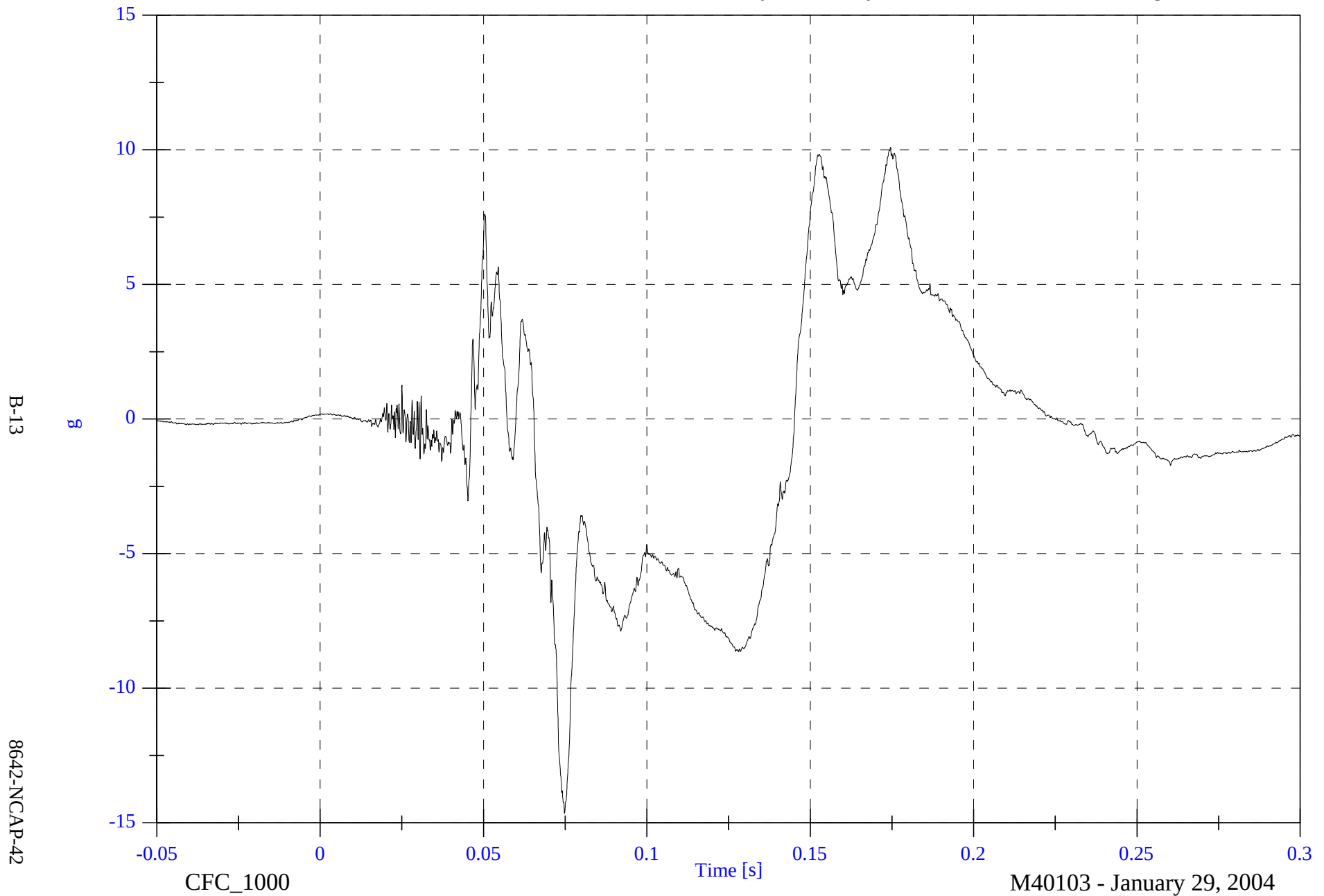


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Head 9 Array Z Arm Ay

Max: 10.1 [g] at 0.175 [s]

Min: -14.6 [g] at 0.075 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

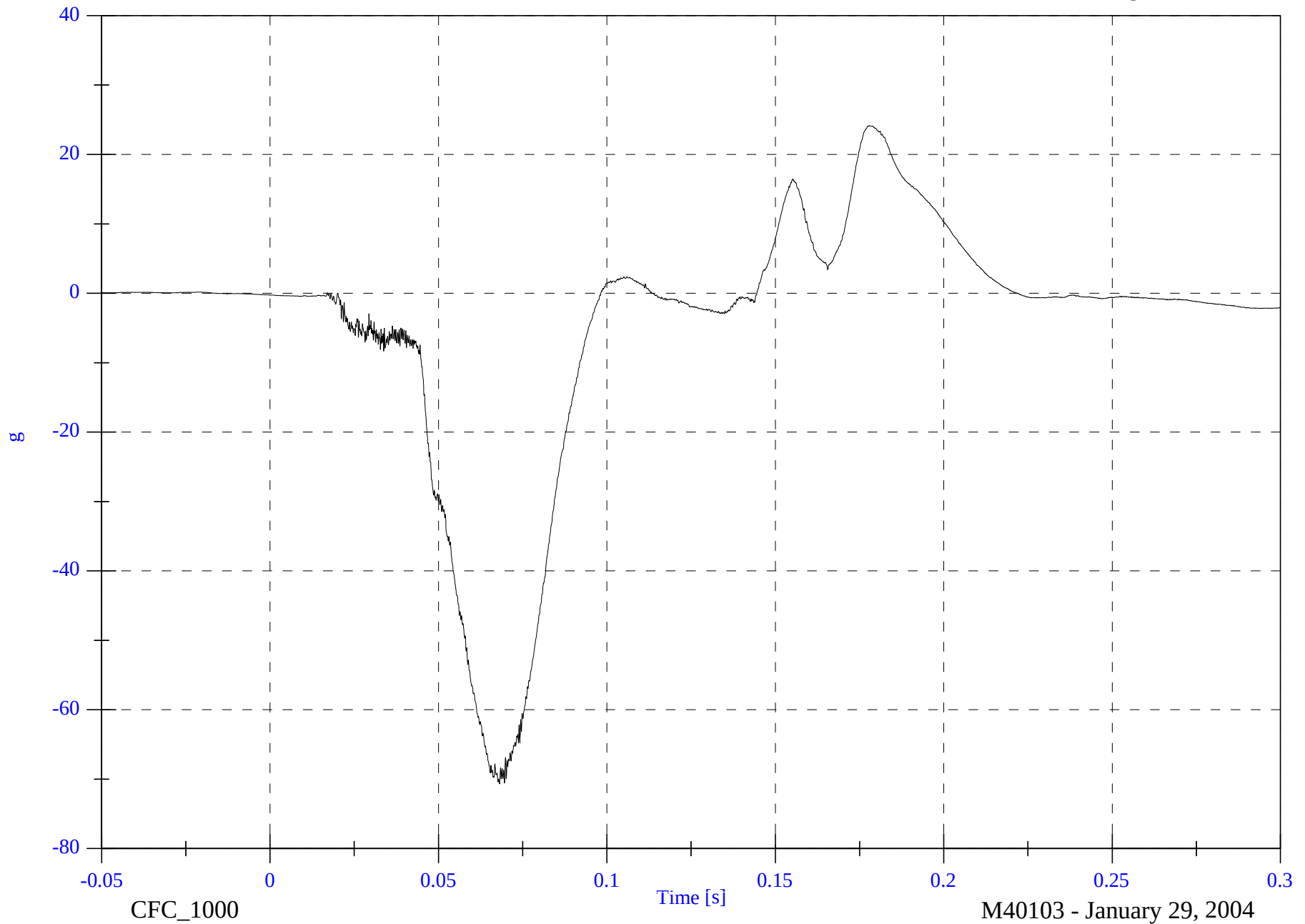
V1P1 Head CG x

Max: 24.1 [g] at 0.178 [s]

Min: -70.7 [g] at 0.068 [s]

B-14

8642-NCAP-42

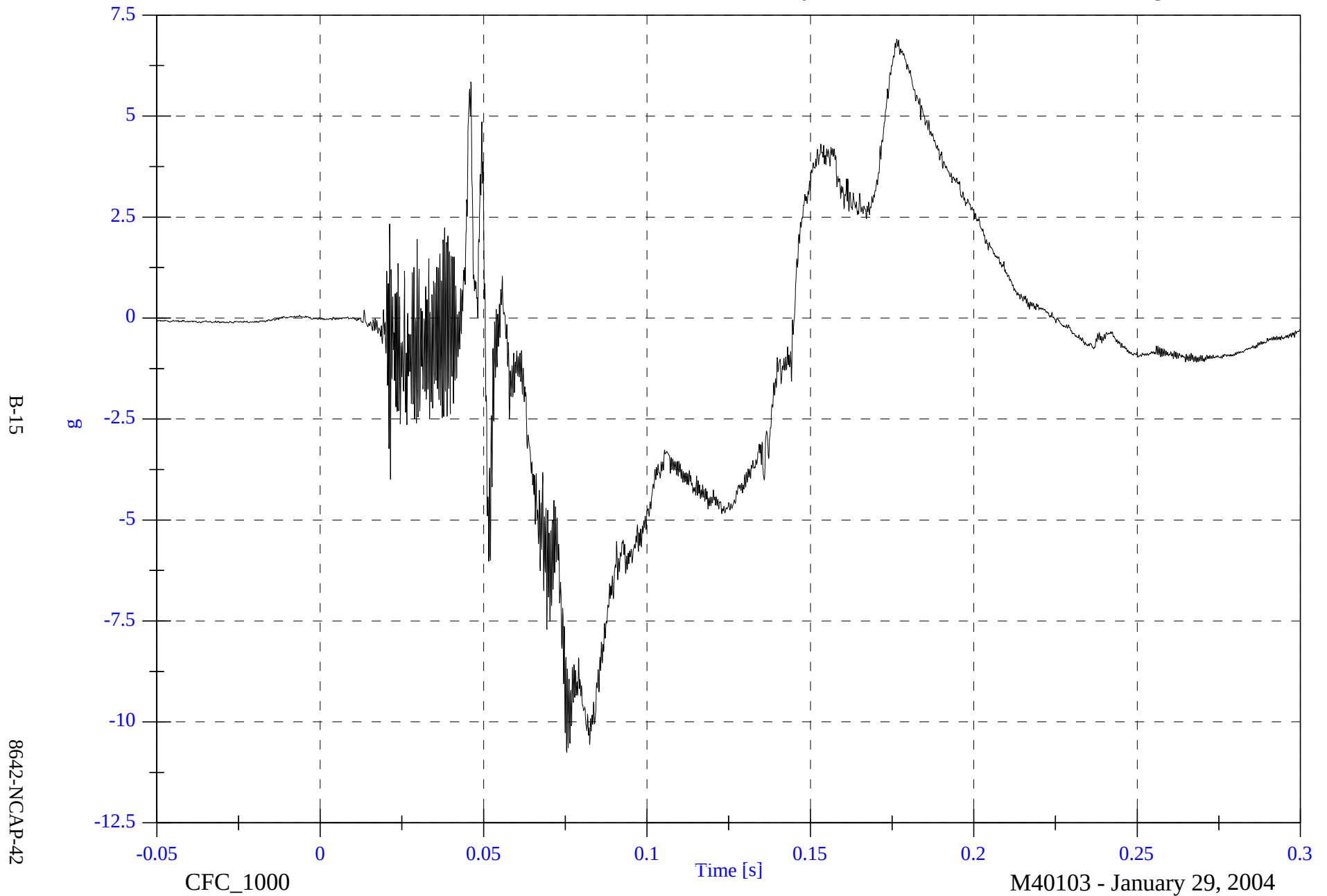


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Head CG y

Max: 6.9 [g] at 0.176 [s]

Min: -10.8 [g] at 0.075 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

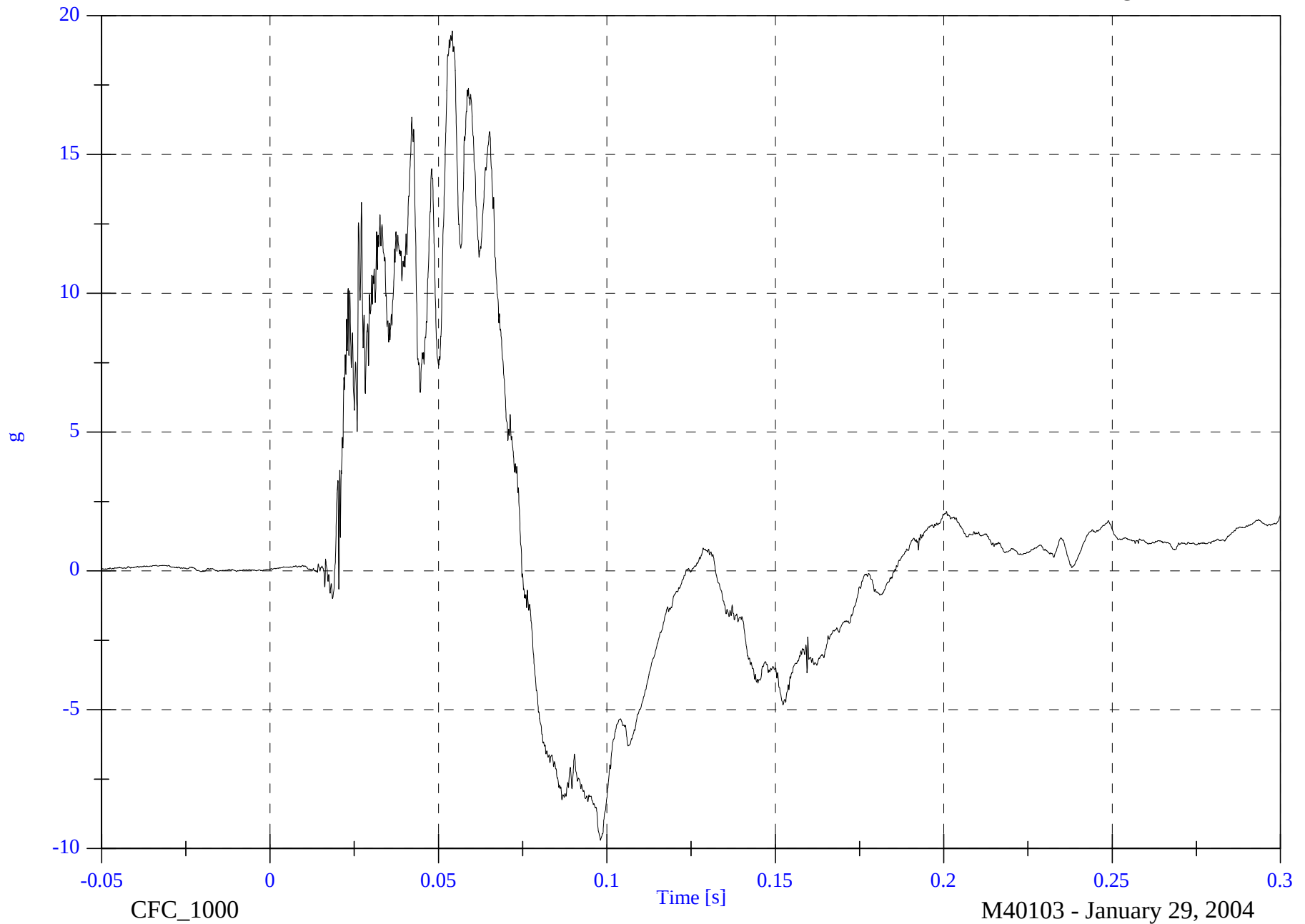
V1P1 Head CG z

Max: 19.5 [g] at 0.054 [s]

Min: -9.7 [g] at 0.098 [s]

B-16

8642-NCAP-42



2004 NCAP Test 6 2004 Chevrolet Colorado

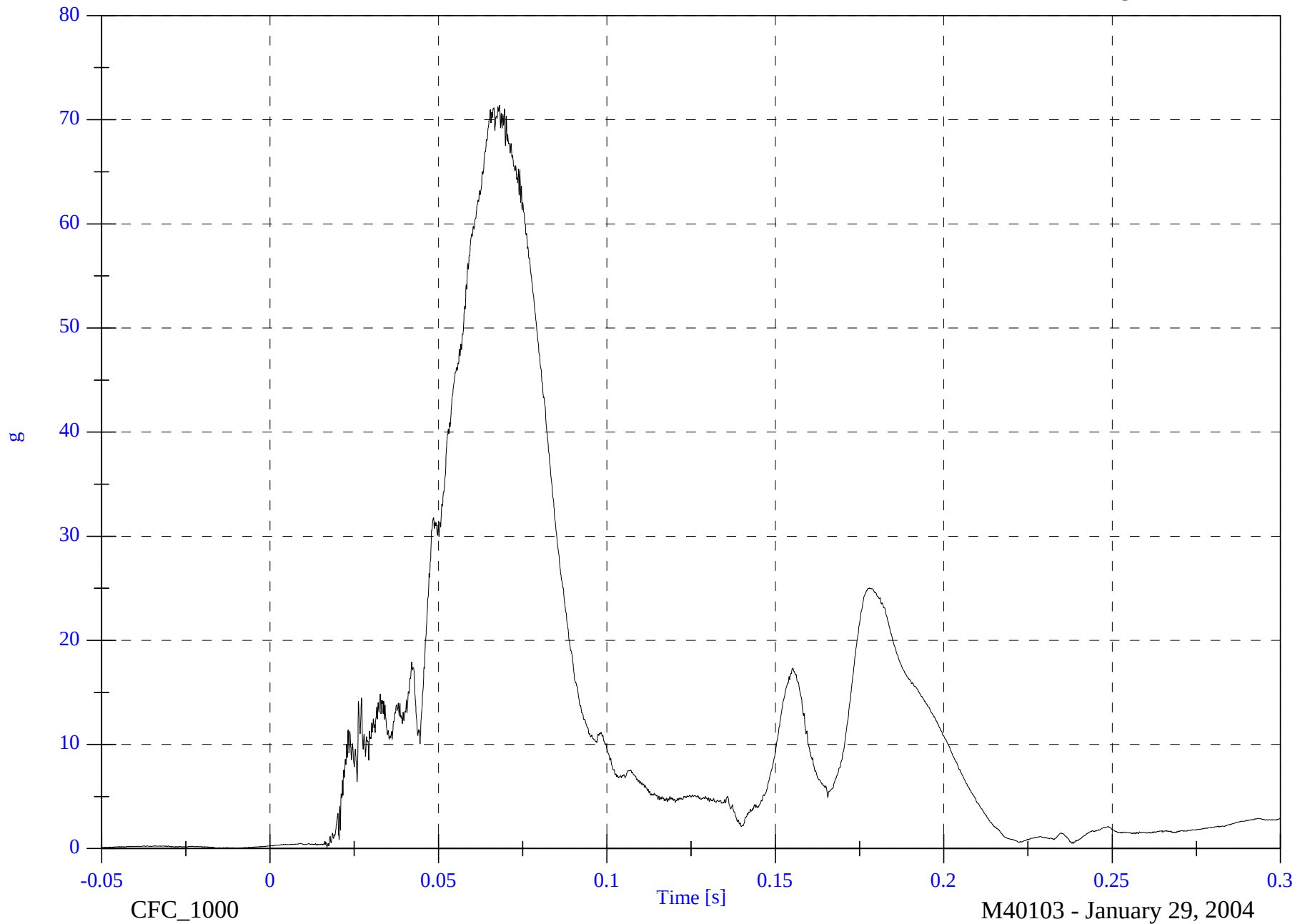
V1P1 Head CG Resultant

Max: 71.4 [g] at 0.068 [s]

Min: 0.0 [g] at -0.010 [s]

B-17

8642-NCAP-42

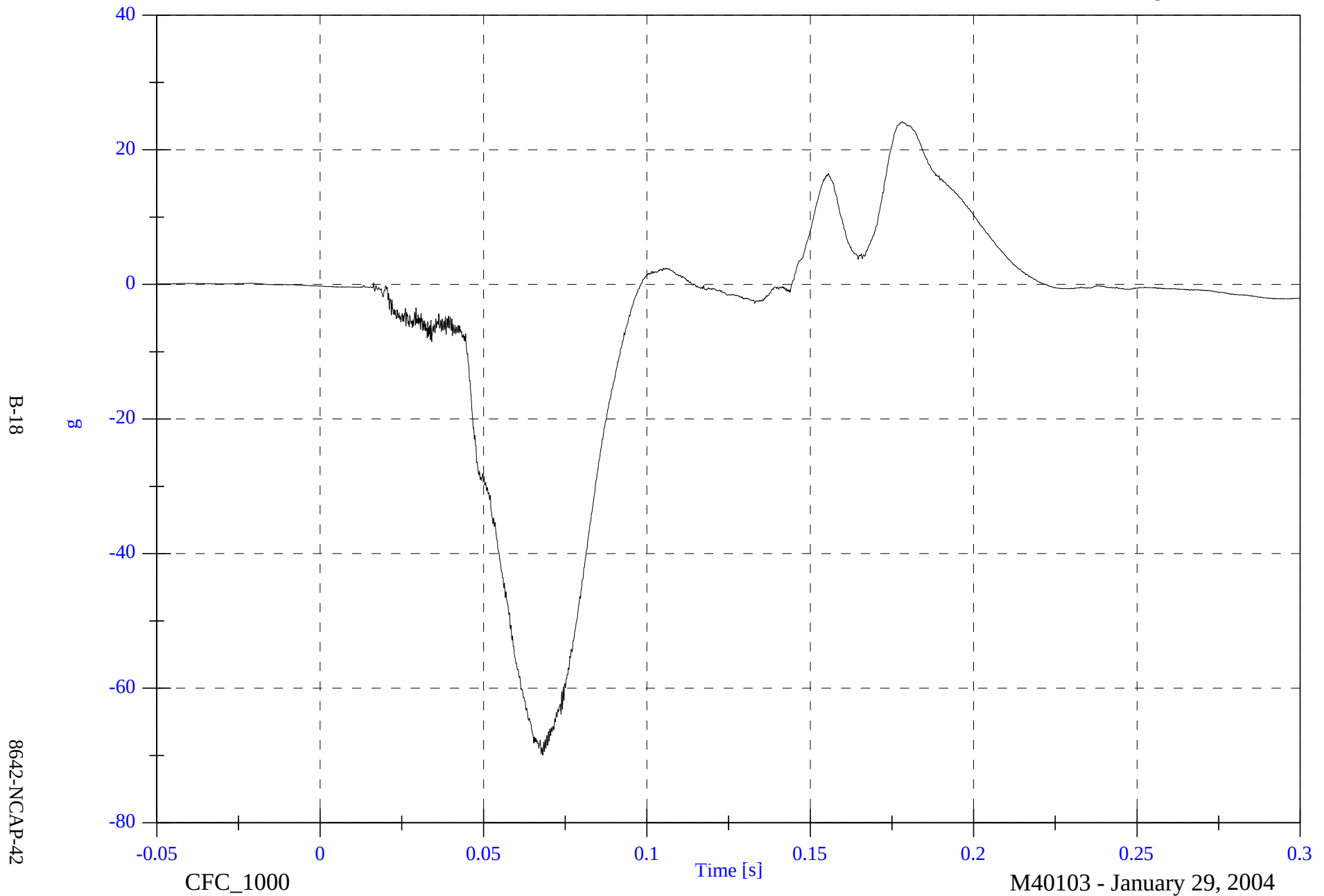


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Head CG Red x

Max: 24.1 [g] at 0.178 [s]

Min: -69.9 [g] at 0.068 [s]

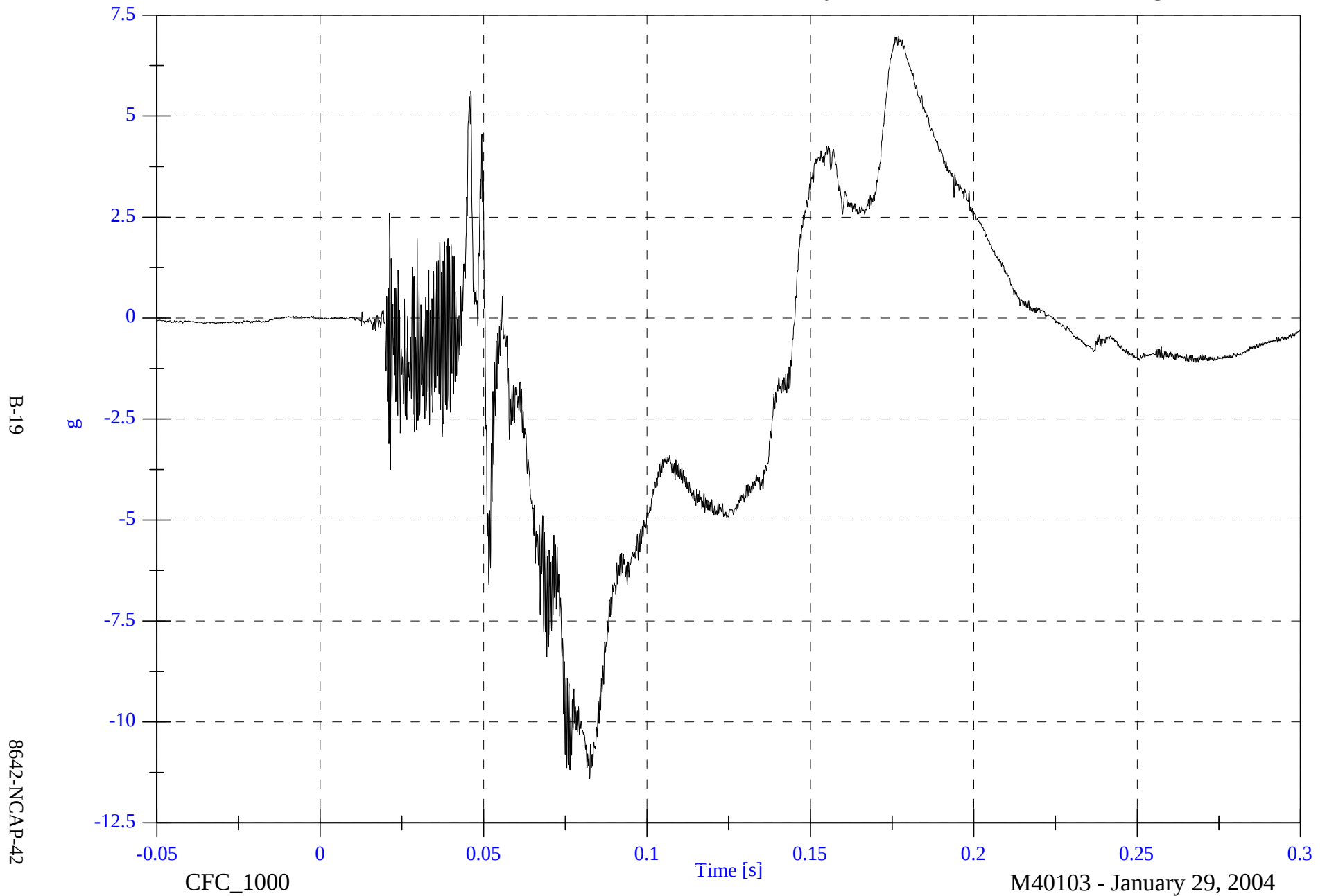


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Head CG Red y

Max: 7.0 [g] at 0.177 [s]

Min: -11.4 [g] at 0.083 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

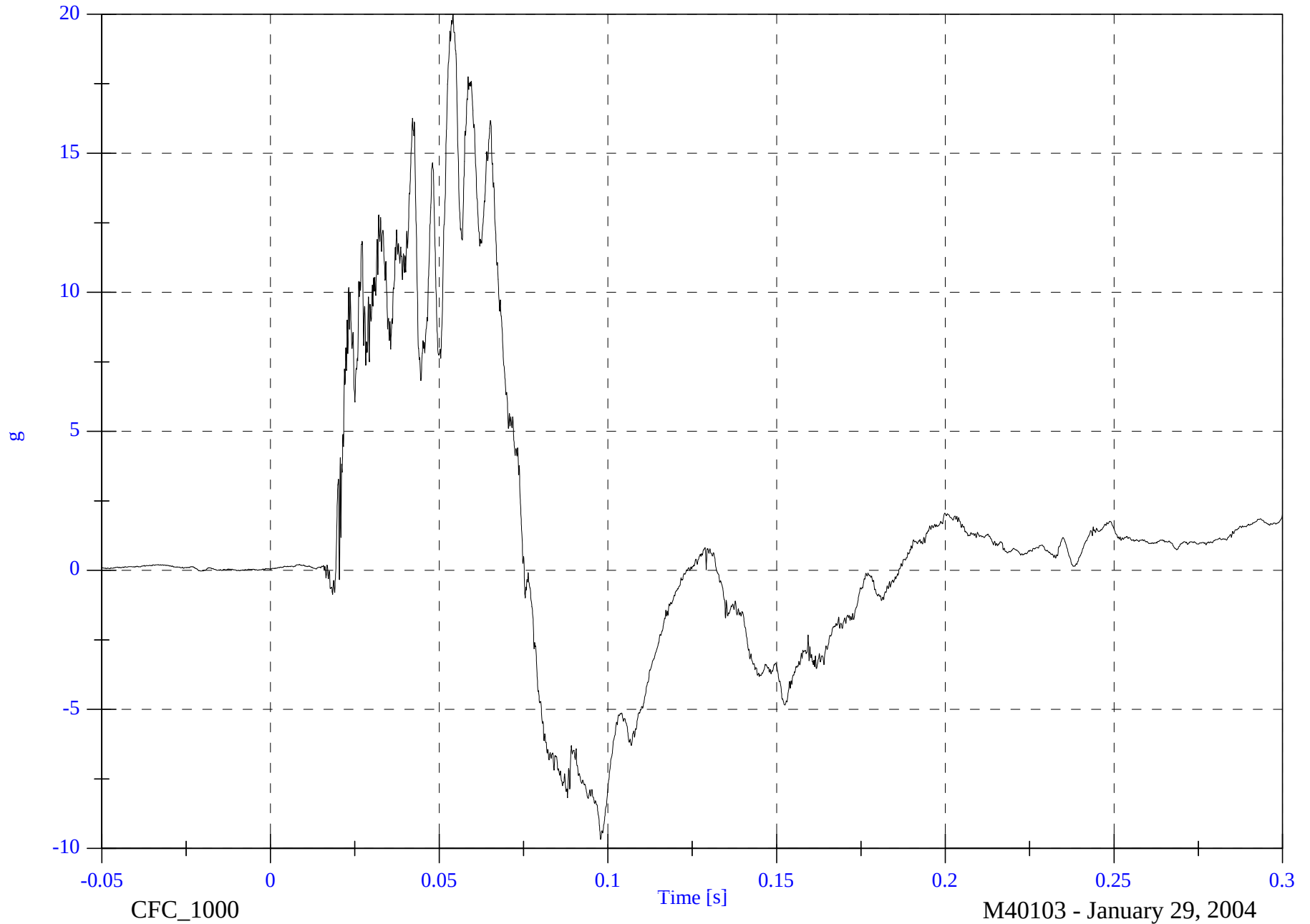
V1P1 Head CG Red z

Max: 20.0 [g] at 0.054 [s]

Min: -9.7 [g] at 0.098 [s]

B-20

8642-NCAP-42

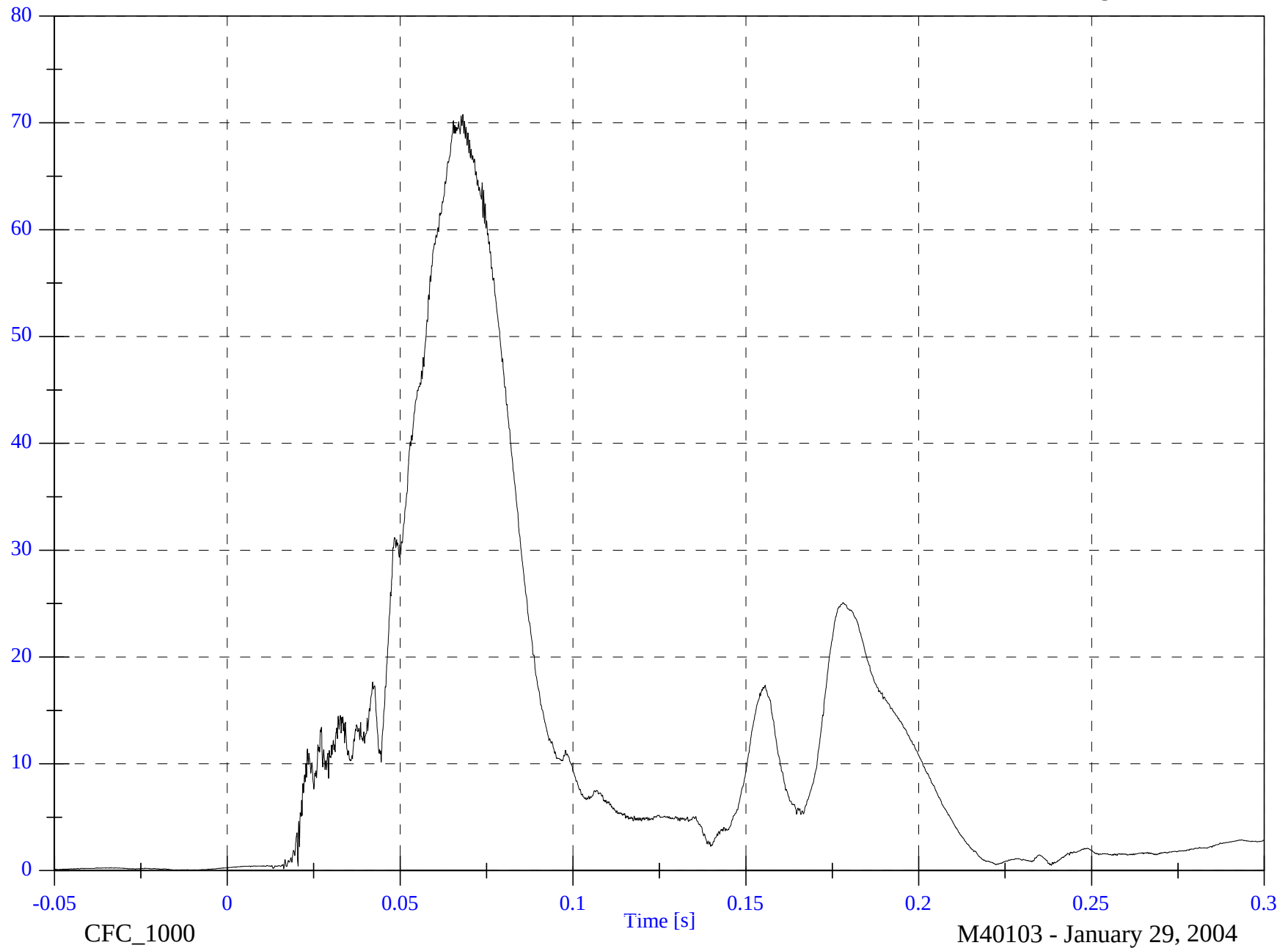


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Head CG Red Resultant

Max: 70.8 [g] at 0.068 [s]

Min: 0.0 [g] at -0.015 [s]



B-21

8642-NCAP-42

2004 NCAP Test 6 2004 Chevrolet Colorado

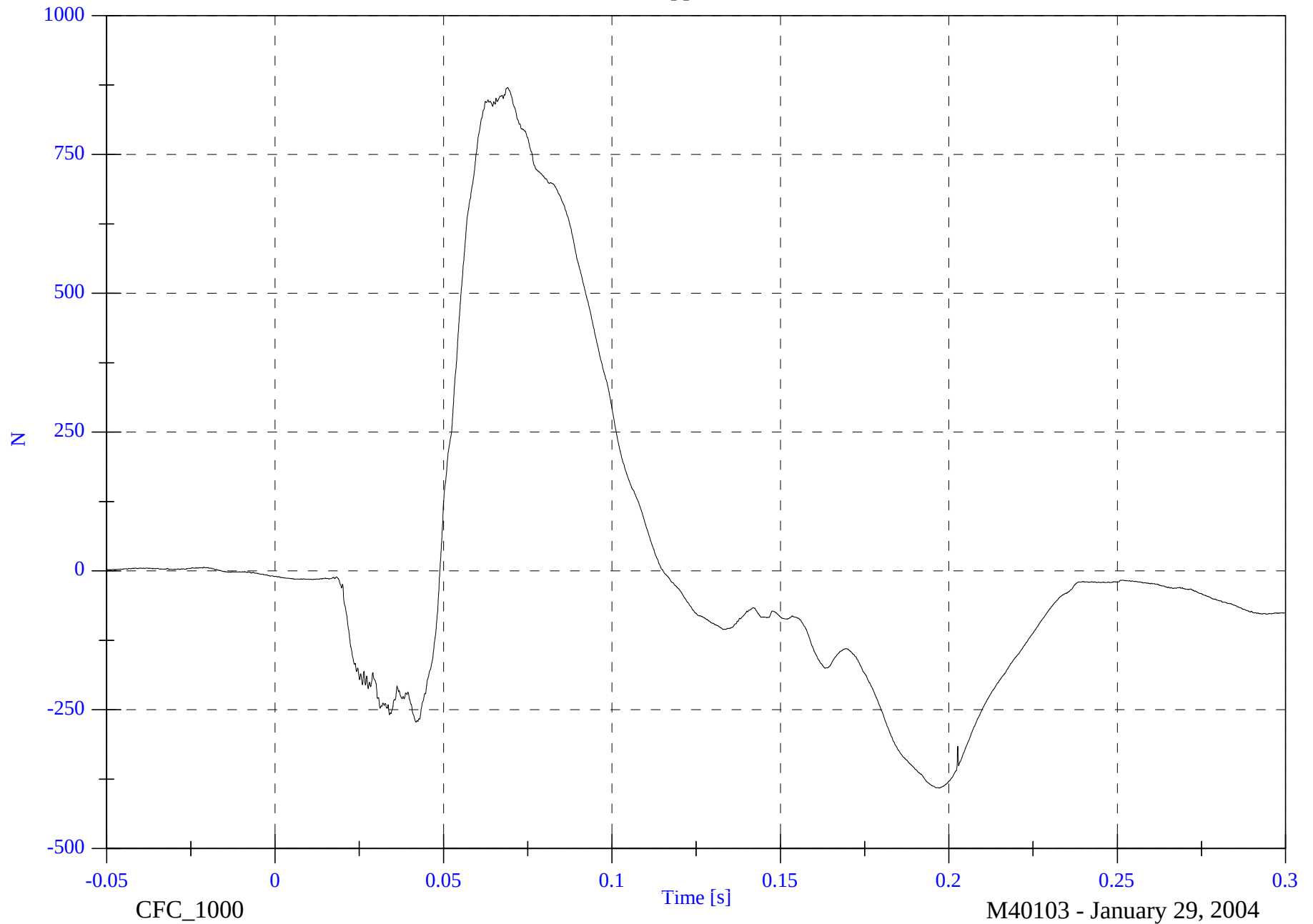
V1P1 Upper Neck Fx

Max: 870.6 [N] at 0.069 [s]

Min: -391.0 [N] at 0.197 [s]

B-22

8642-NCAP-42

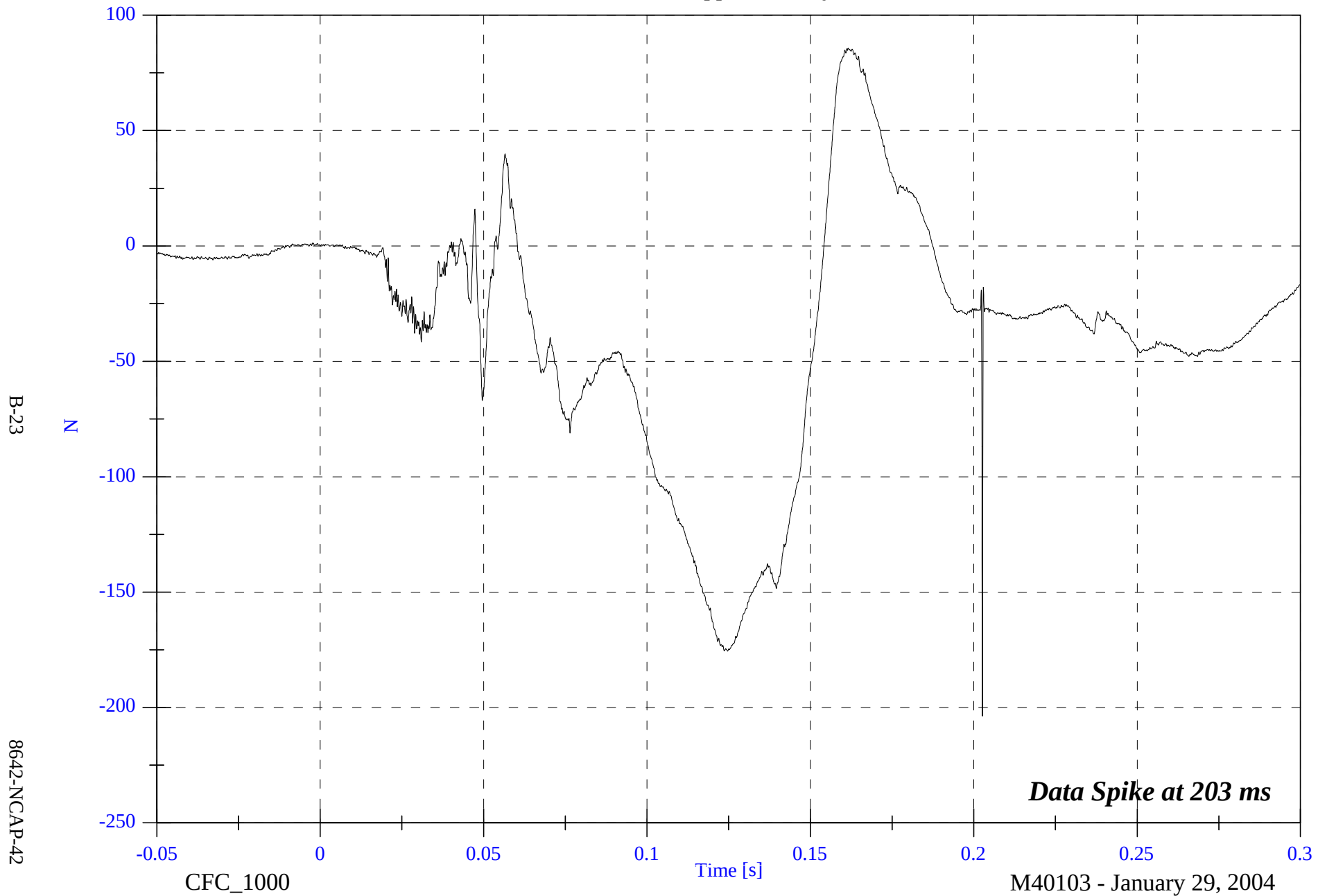


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Upper Neck Fy

Max: 85.8 [N] at 0.162 [s]

Min: -203.8 [N] at 0.203 [s]

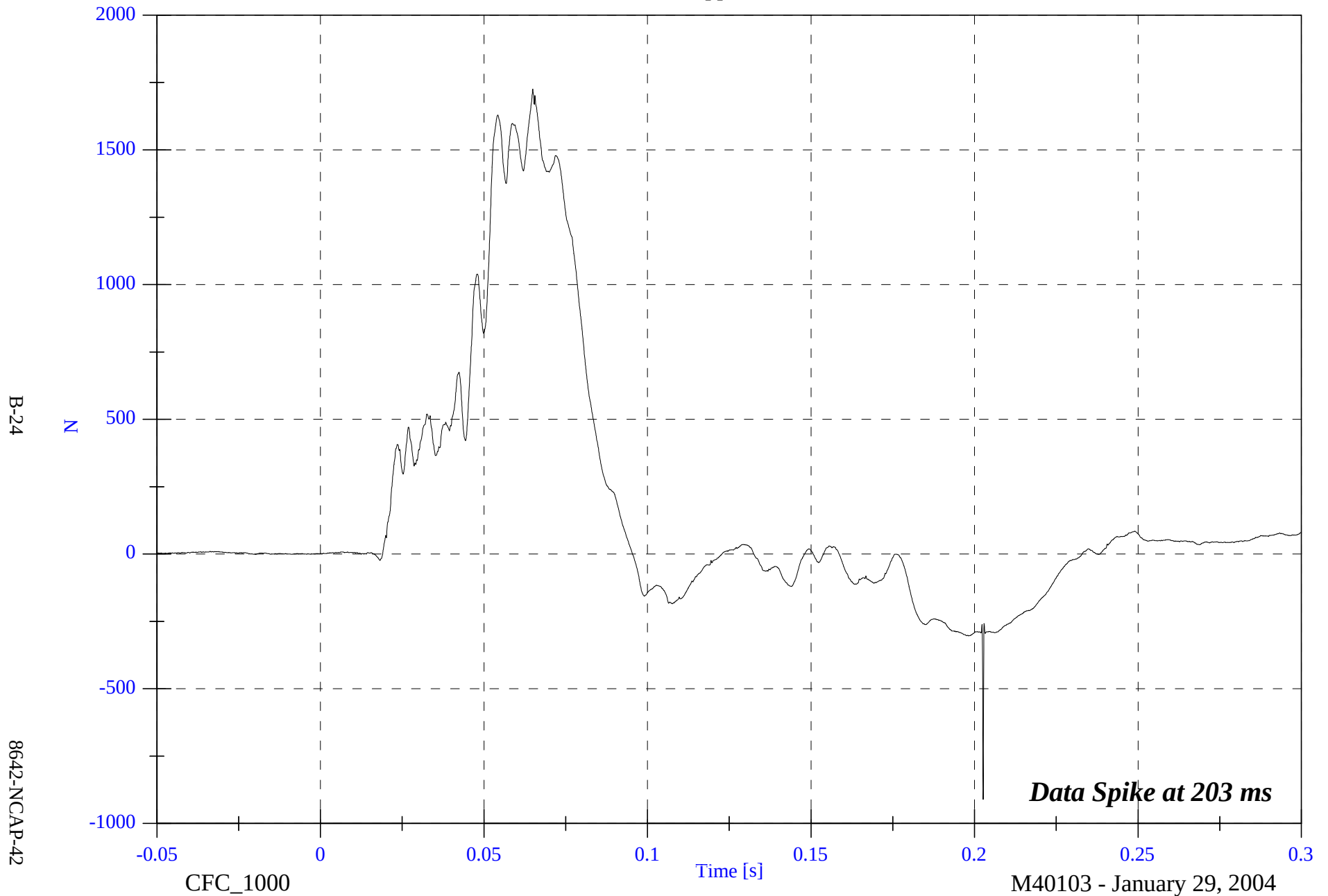


2004 NCAP Test 6 2004 Chevrolet Colorado

Max: 1725.5 [N] at 0.065 [s]

Min: -910.6 [N] at 0.203 [s]

V1P1 Upper Neck Fz

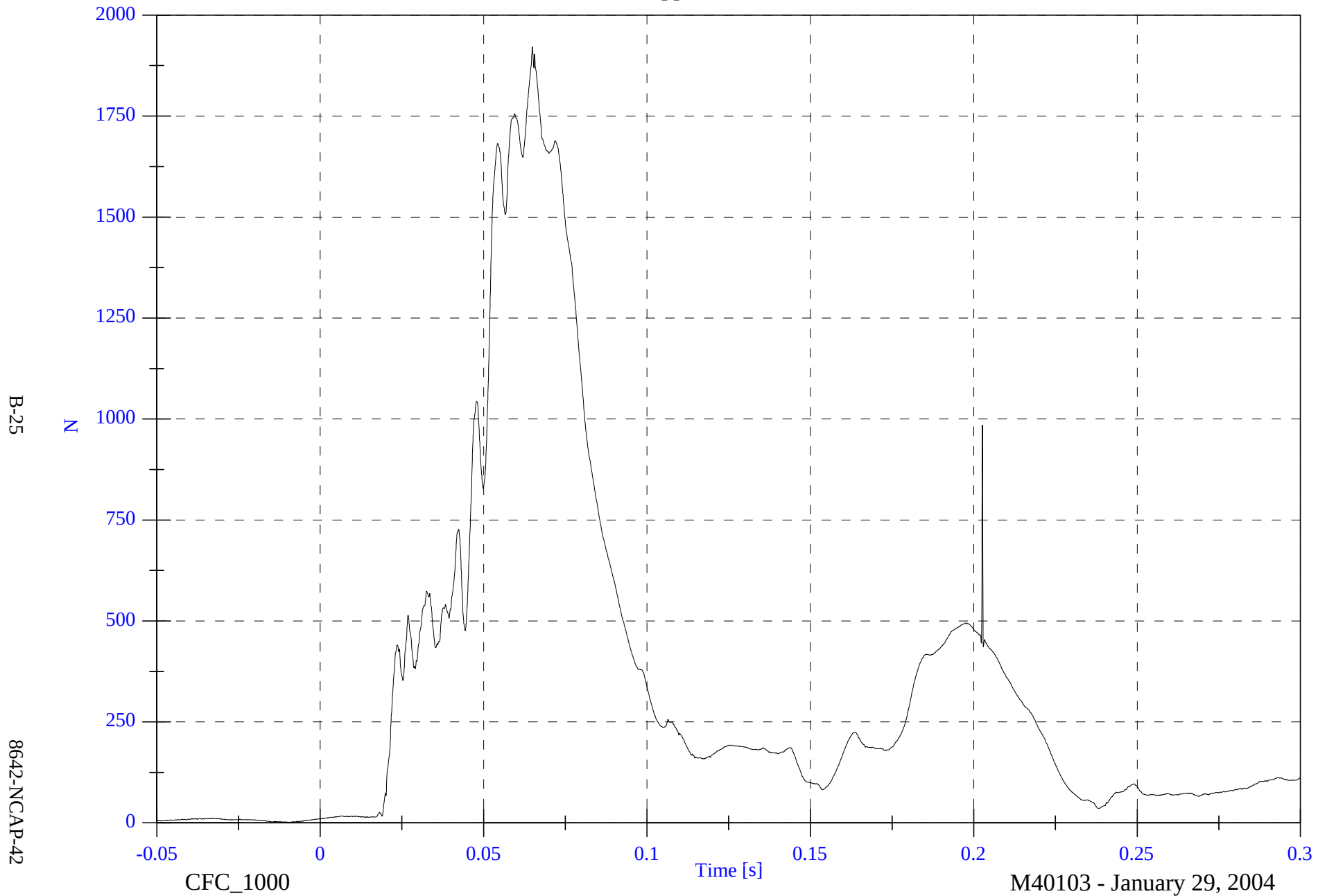


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Upper Neck F Resultant

Max: 1921.6 [N] at 0.065 [s]

Min: 1.3 [N] at -0.009 [s]

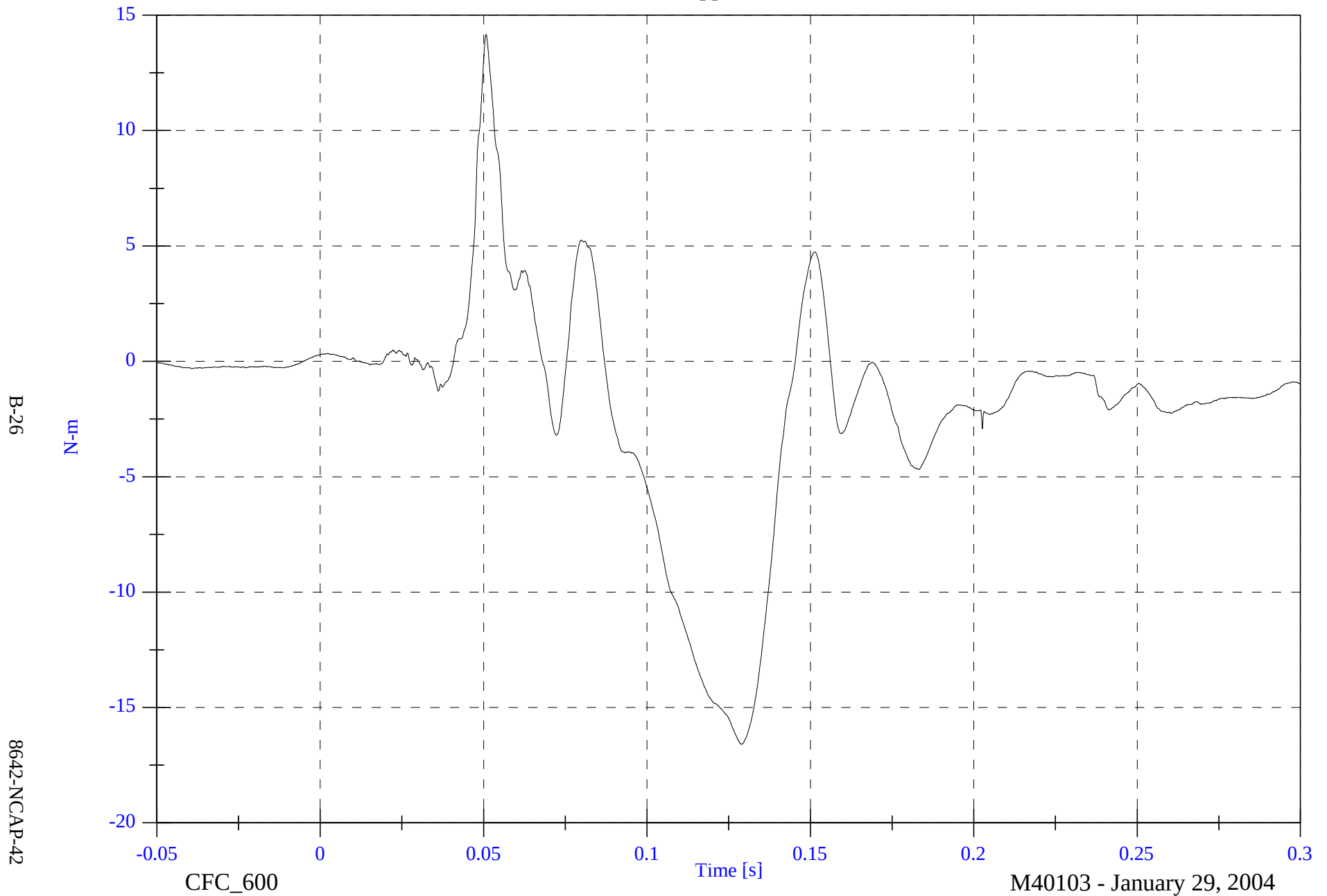


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Upper Neck Mx

Max: 14.2 [N-m] at 0.051 [s]

Min: -16.6 [N-m] at 0.129 [s]

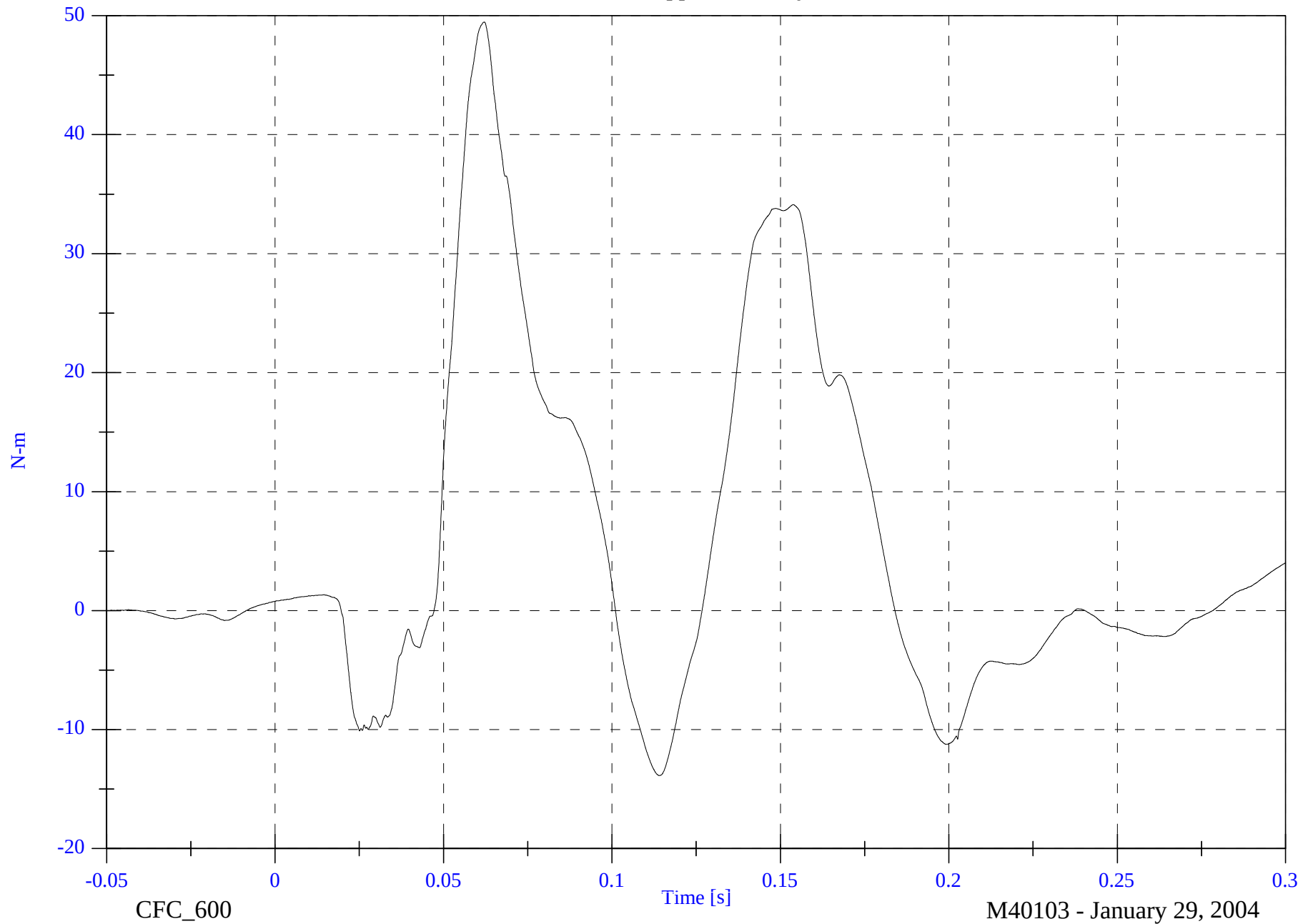


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Upper Neck My

Max: 49.5 [N-m] at 0.062 [s]

Min: -13.9 [N-m] at 0.114 [s]



B-27

8642-NCAP-42

2004 NCAP Test 6 2004 Chevrolet Colorado

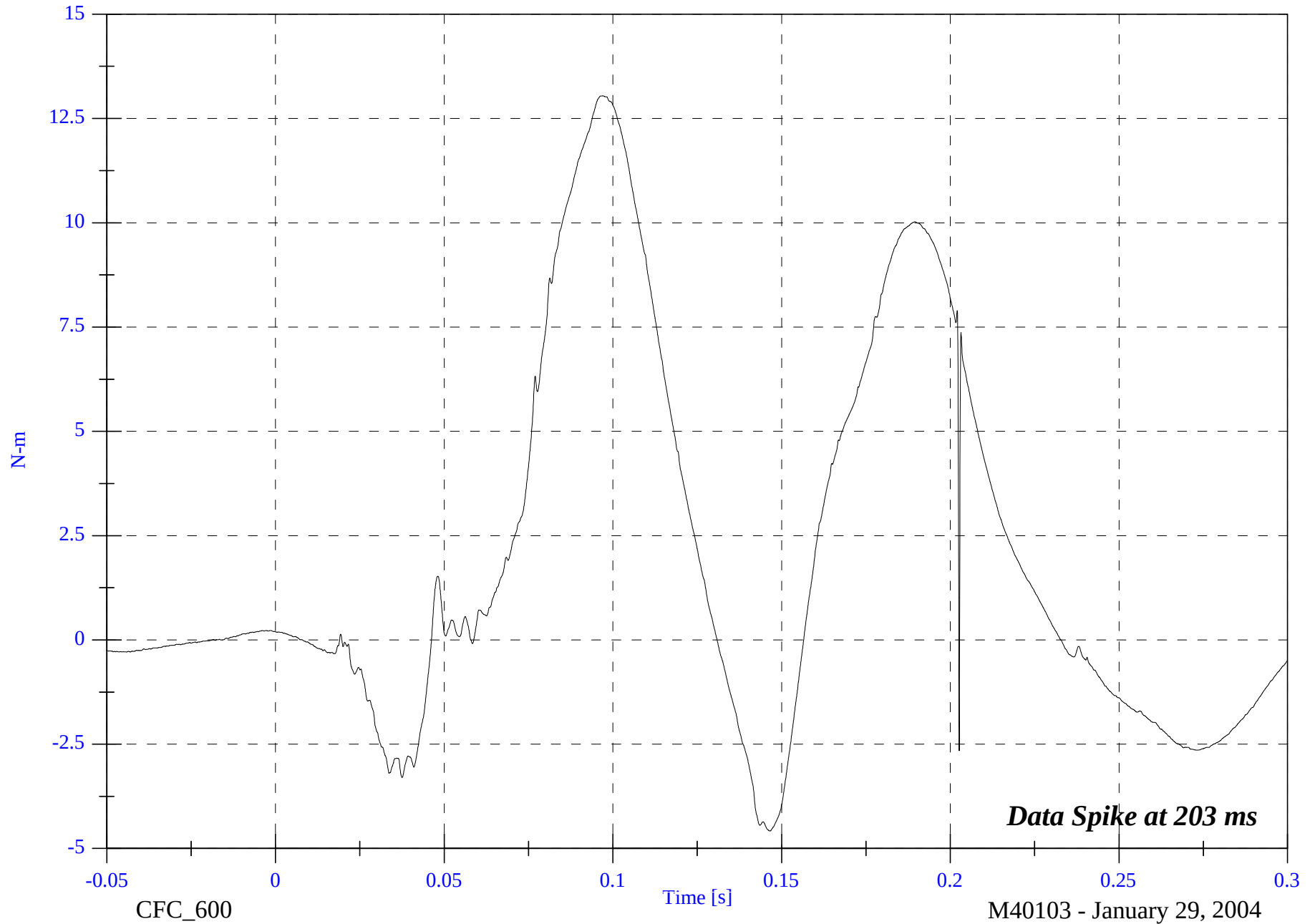
V1P1 Upper Neck Mz

Max: 13.0 [N-m] at 0.097 [s]

Min: -4.6 [N-m] at 0.147 [s]

B-28

8642-NCAP-42

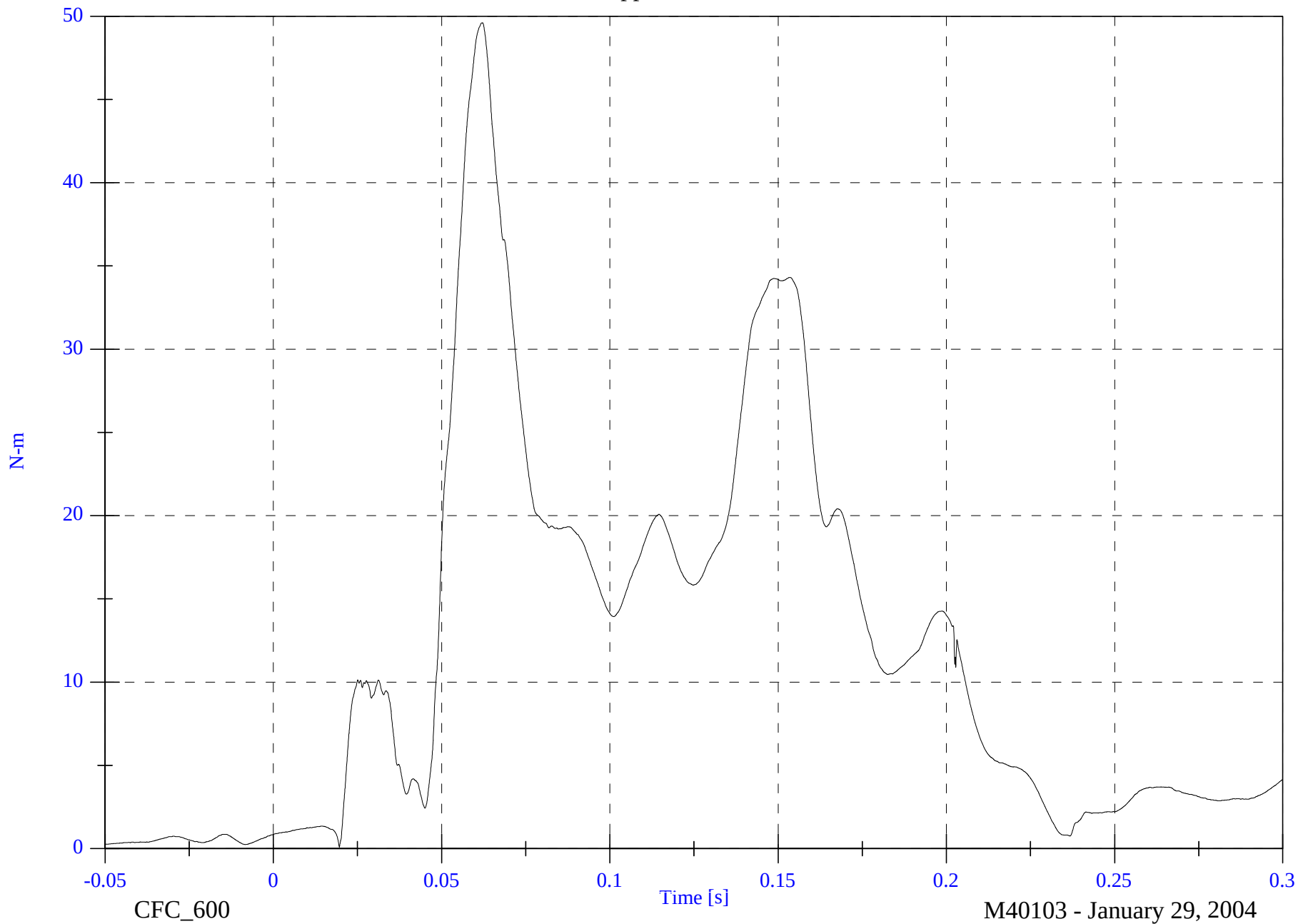


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Upper Neck M Resultant

Max: 49.6 [N-m] at 0.062 [s]

Min: 0.1 [N-m] at 0.020 [s]



B-29

8642-NCAP-42

CFC_600

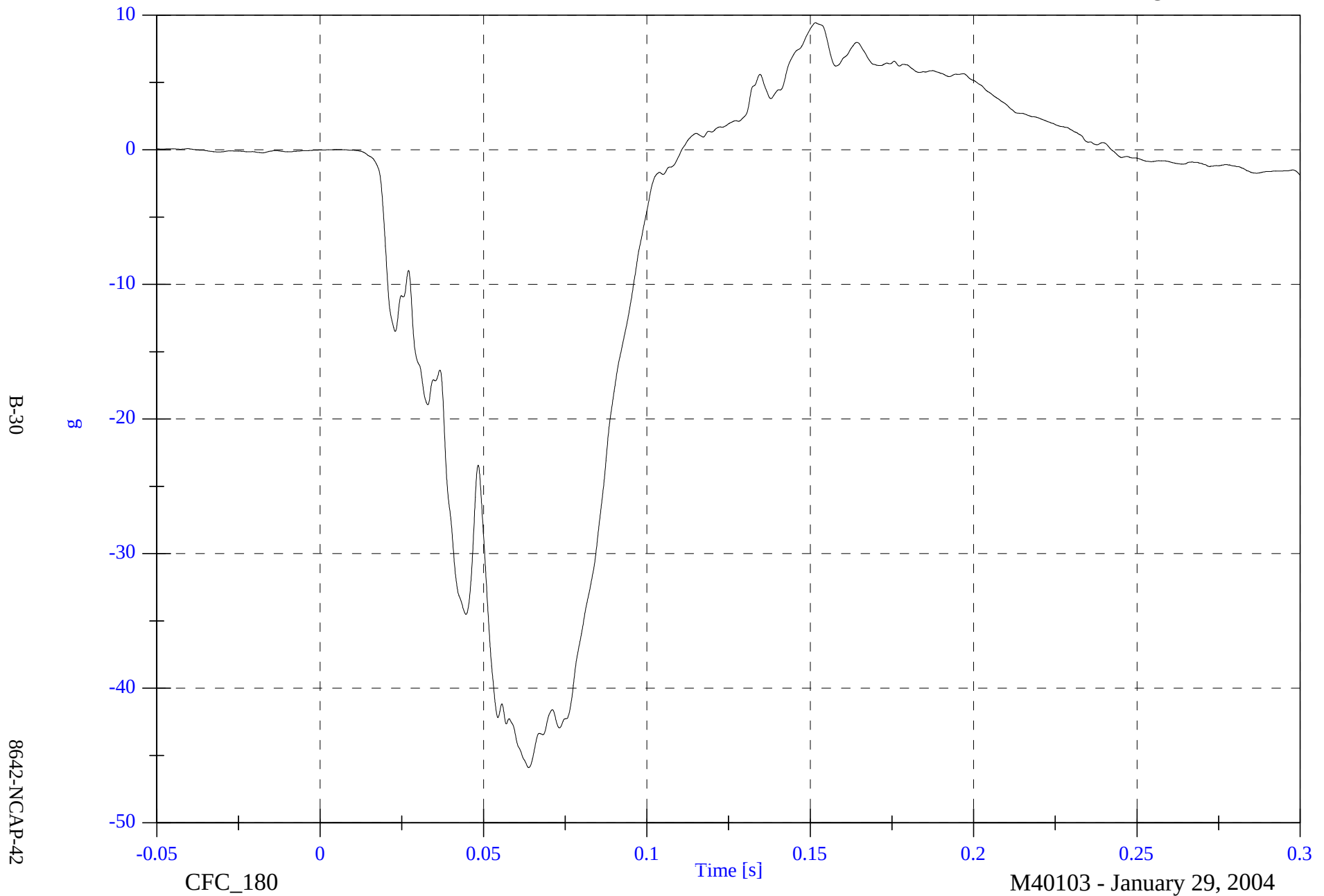
M40103 - January 29, 2004

2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Chest x

Max: 9.4 [g] at 0.152 [s]

Min: -45.9 [g] at 0.064 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

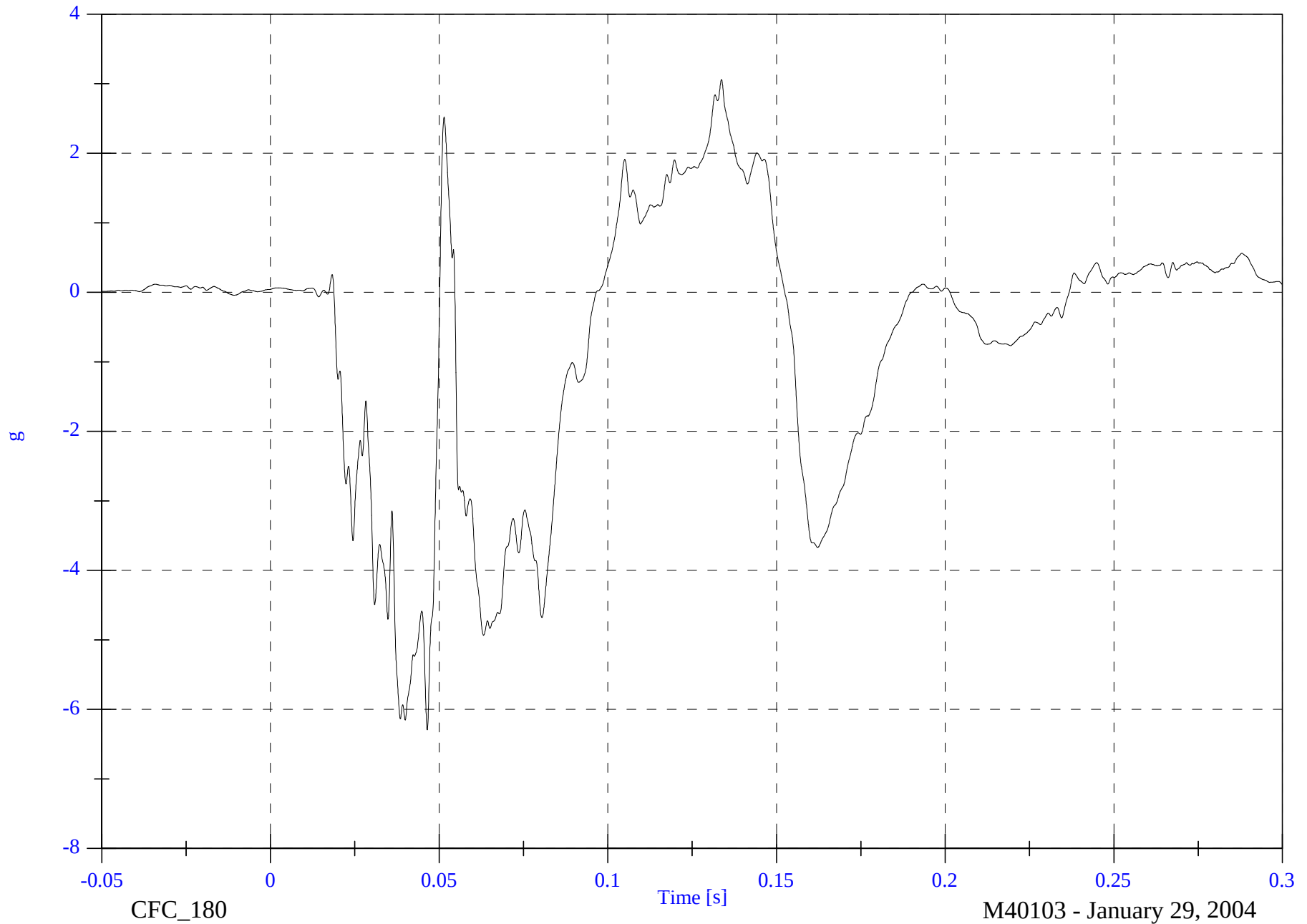
V1P1 Chest y

Max: 3.1 [g] at 0.134 [s]

Min: -6.3 [g] at 0.046 [s]

B-31

8642-NCAP-42

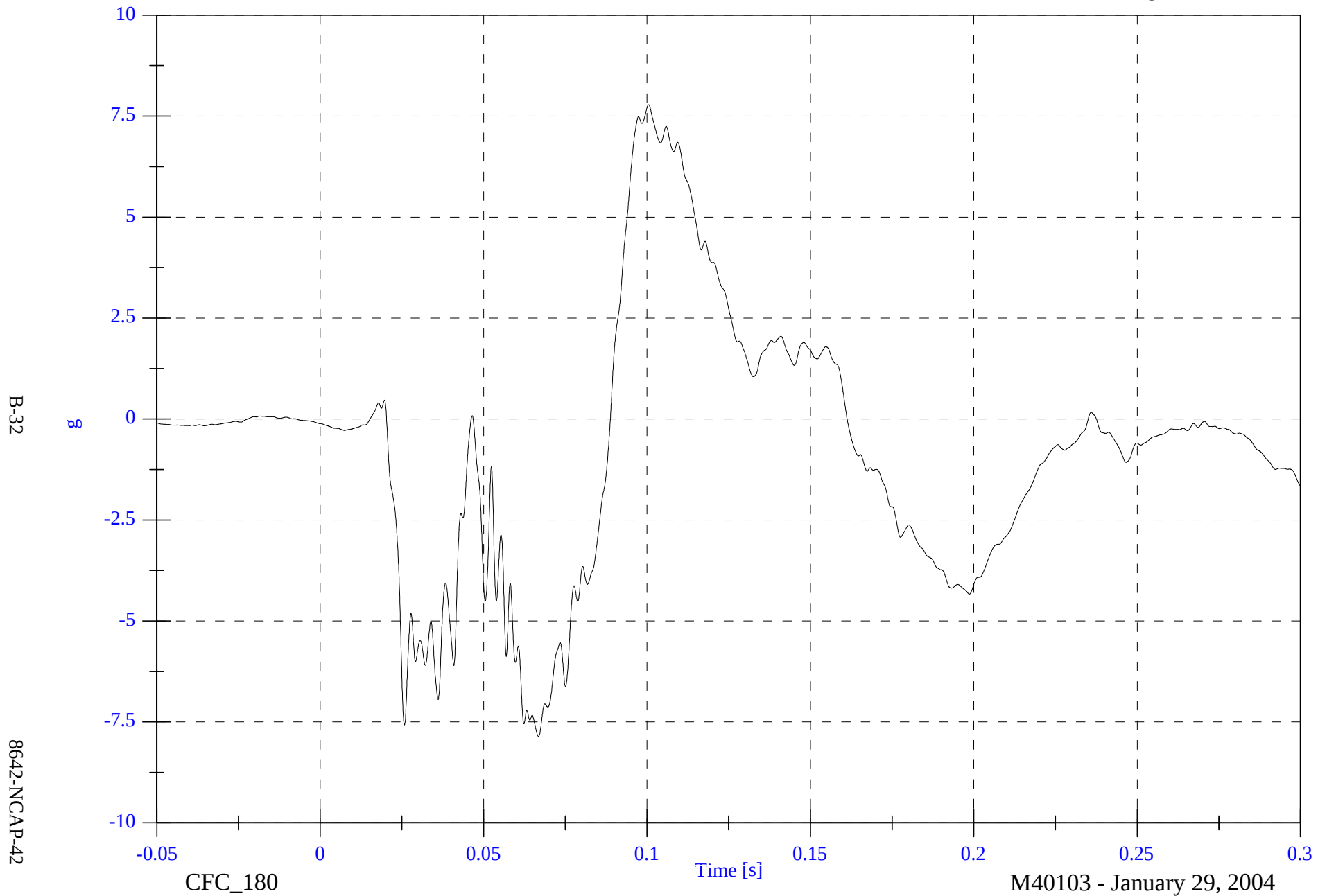


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Chest z

Max: 7.8 [g] at 0.101 [s]

Min: -7.9 [g] at 0.067 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

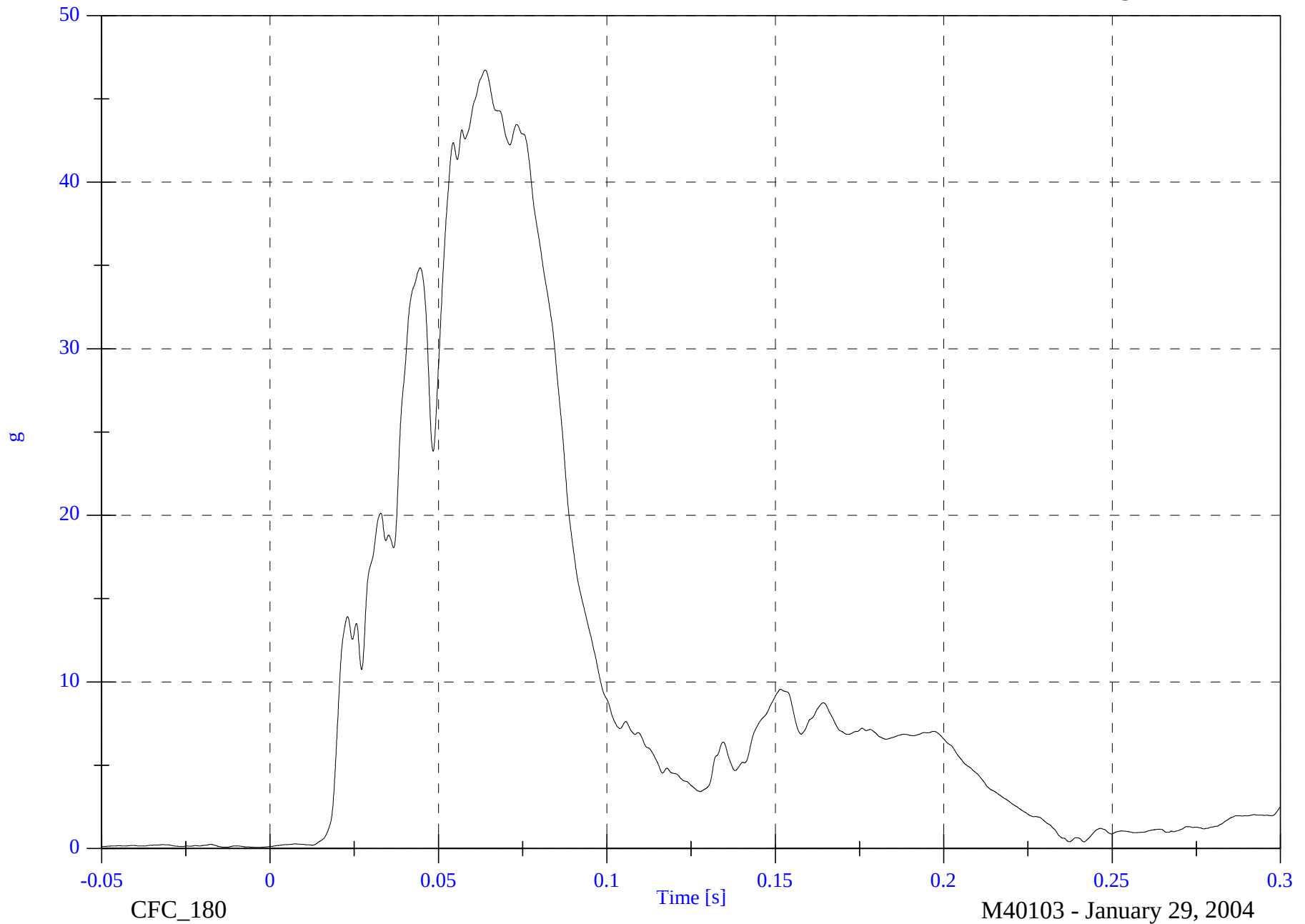
V1P1 Chest Resultant

Max: 46.7 [g] at 0.064 [s]

Min: 0.1 [g] at -0.003 [s]

B-33

8642-NCAP-42



2004 NCAP Test 6 2004 Chevrolet Colorado

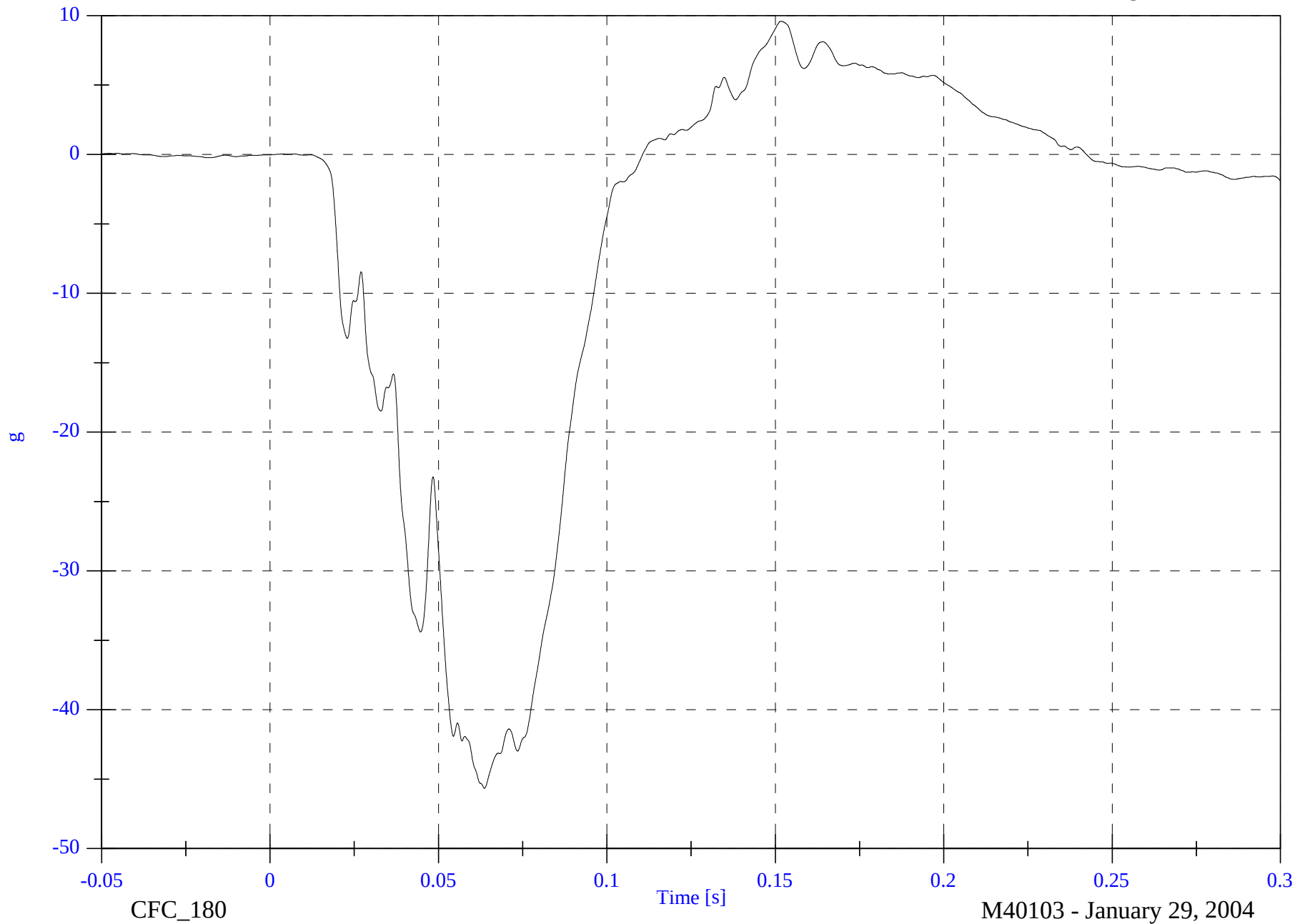
V1P1 Chest Red x

Max: 9.6 [g] at 0.152 [s]

Min: -45.7 [g] at 0.064 [s]

B-34

8642-NCAP-42



2004 NCAP Test 6 2004 Chevrolet Colorado

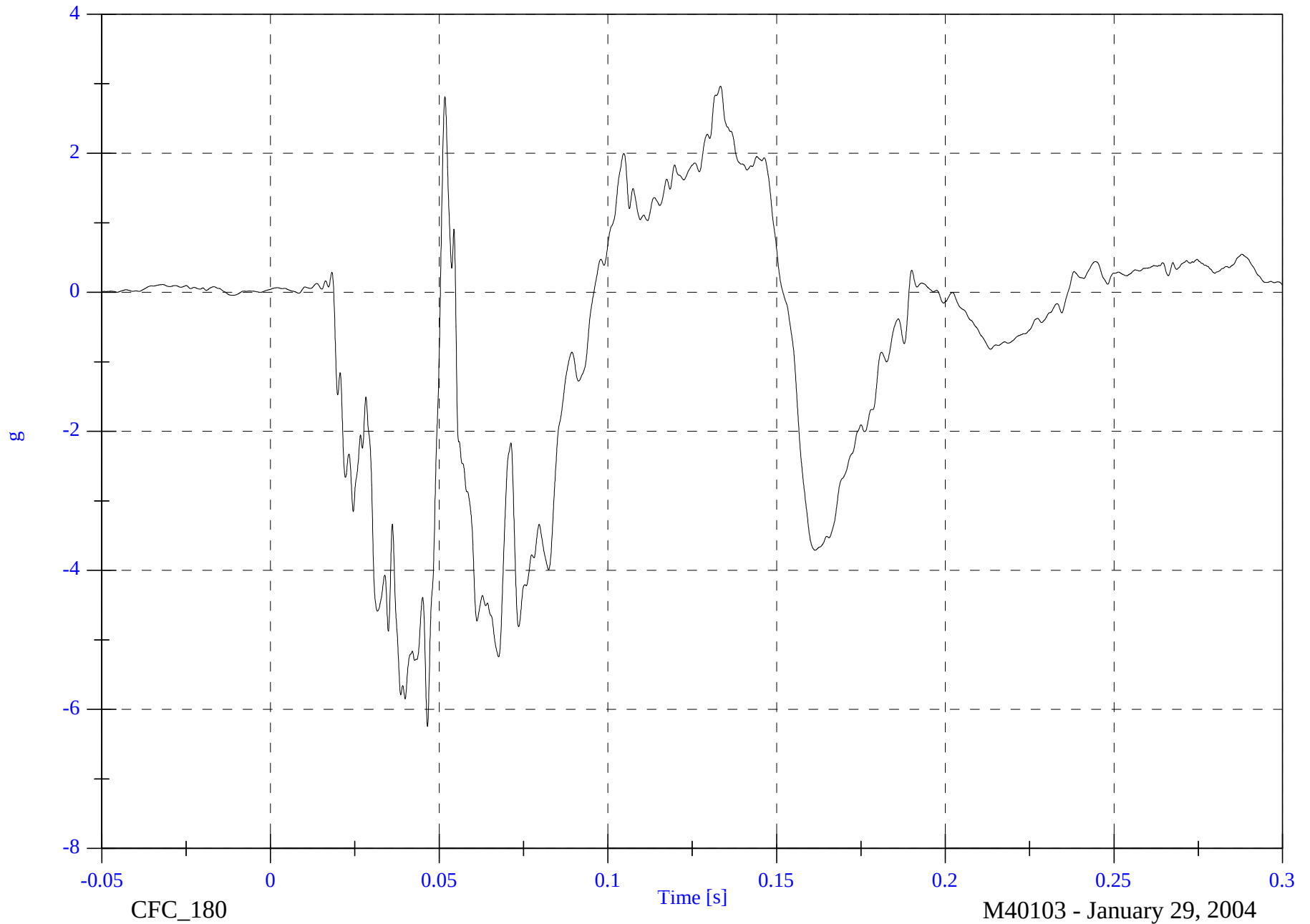
V1P1 Chest Red y

Max: 3.0 [g] at 0.133 [s]

Min: -6.2 [g] at 0.047 [s]

B-35

8642-NCAP-42



2004 NCAP Test 6 2004 Chevrolet Colorado

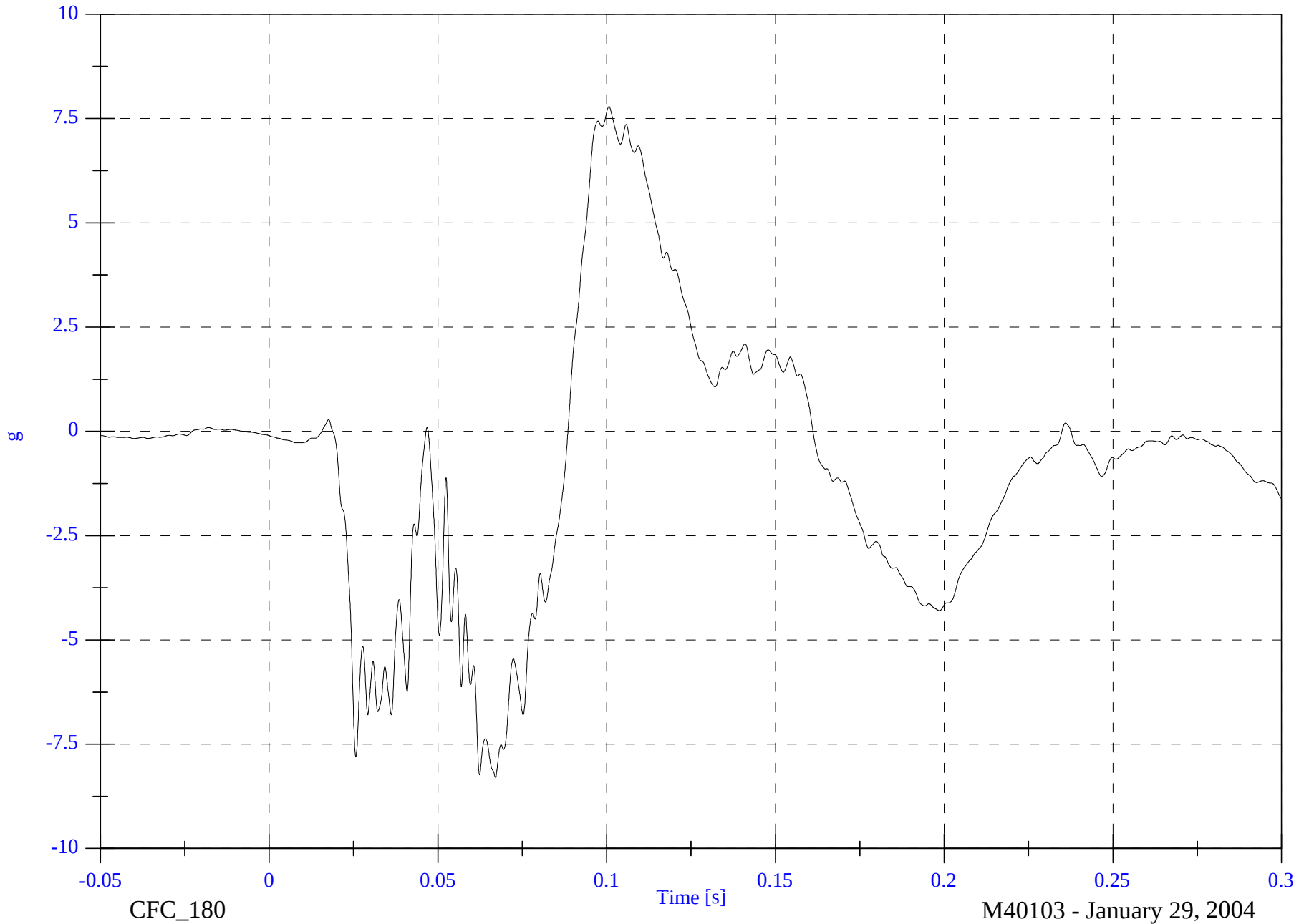
V1P1 Chest Red z

Max: 7.8 [g] at 0.101 [s]

Min: -8.3 [g] at 0.067 [s]

B-36

8642-NCAP-42

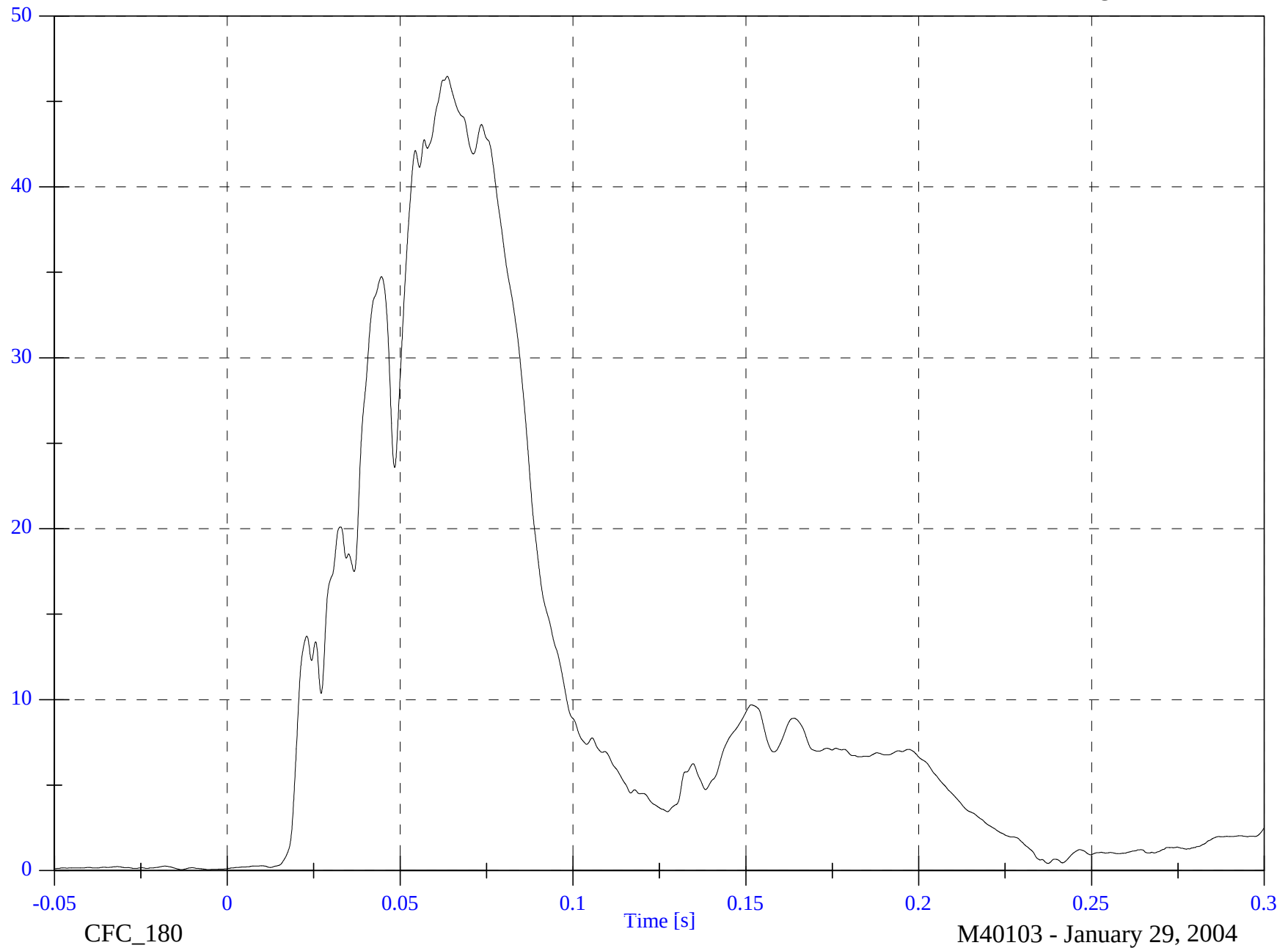


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Chest Red Resultant

Max: 46.5 [g] at 0.064 [s]

Min: 0.1 [g] at -0.013 [s]



B-37

8642-NCAP-42

2004 NCAP Test 6 2004 Chevrolet Colorado

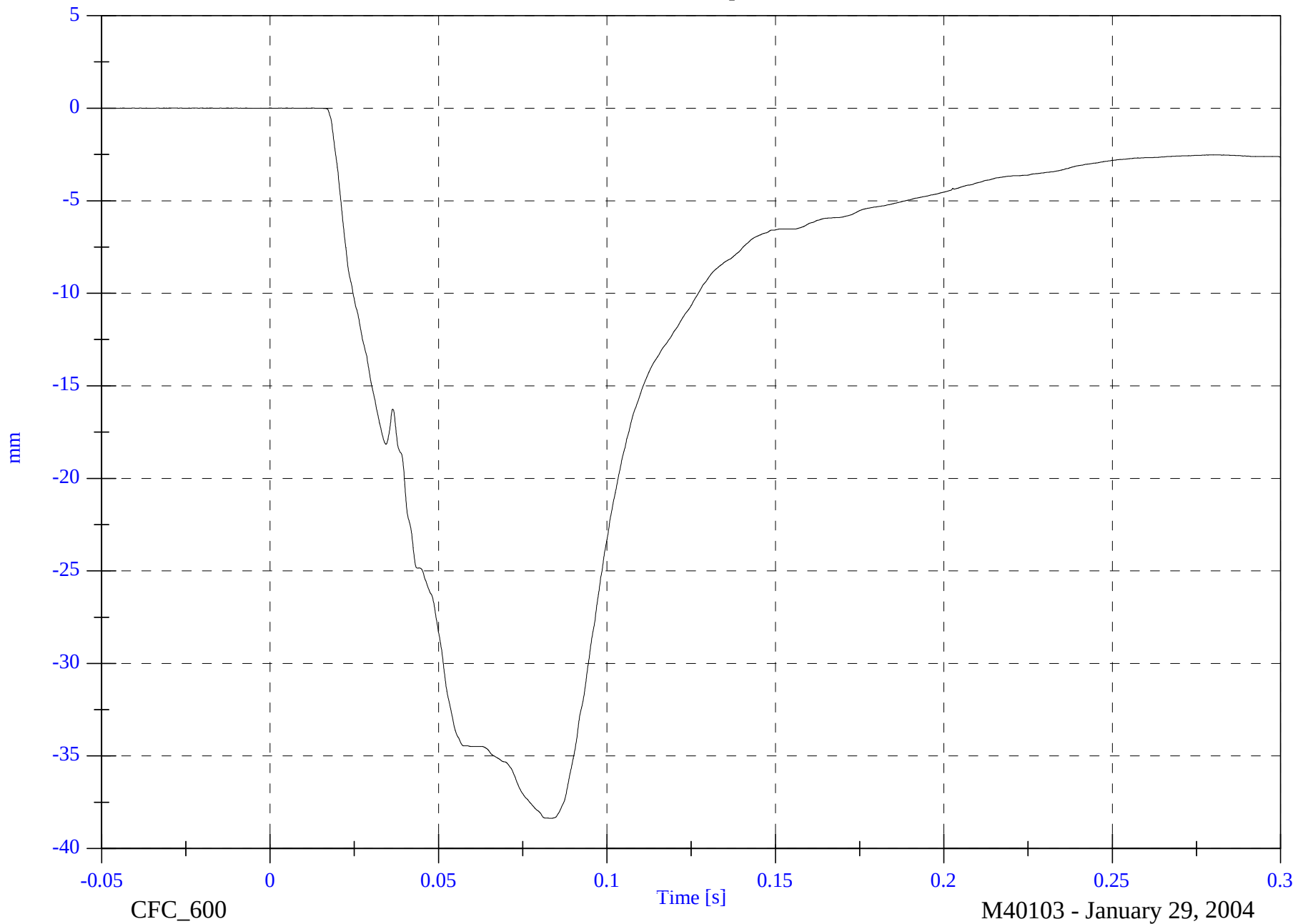
V1P1 Chest Compression x

Max: 0.0 [mm] at -0.020 [s]

Min: -38.4 [mm] at 0.083 [s]

B-38

8642-NCAP-42



2004 NCAP Test 6 2004 Chevrolet Colorado

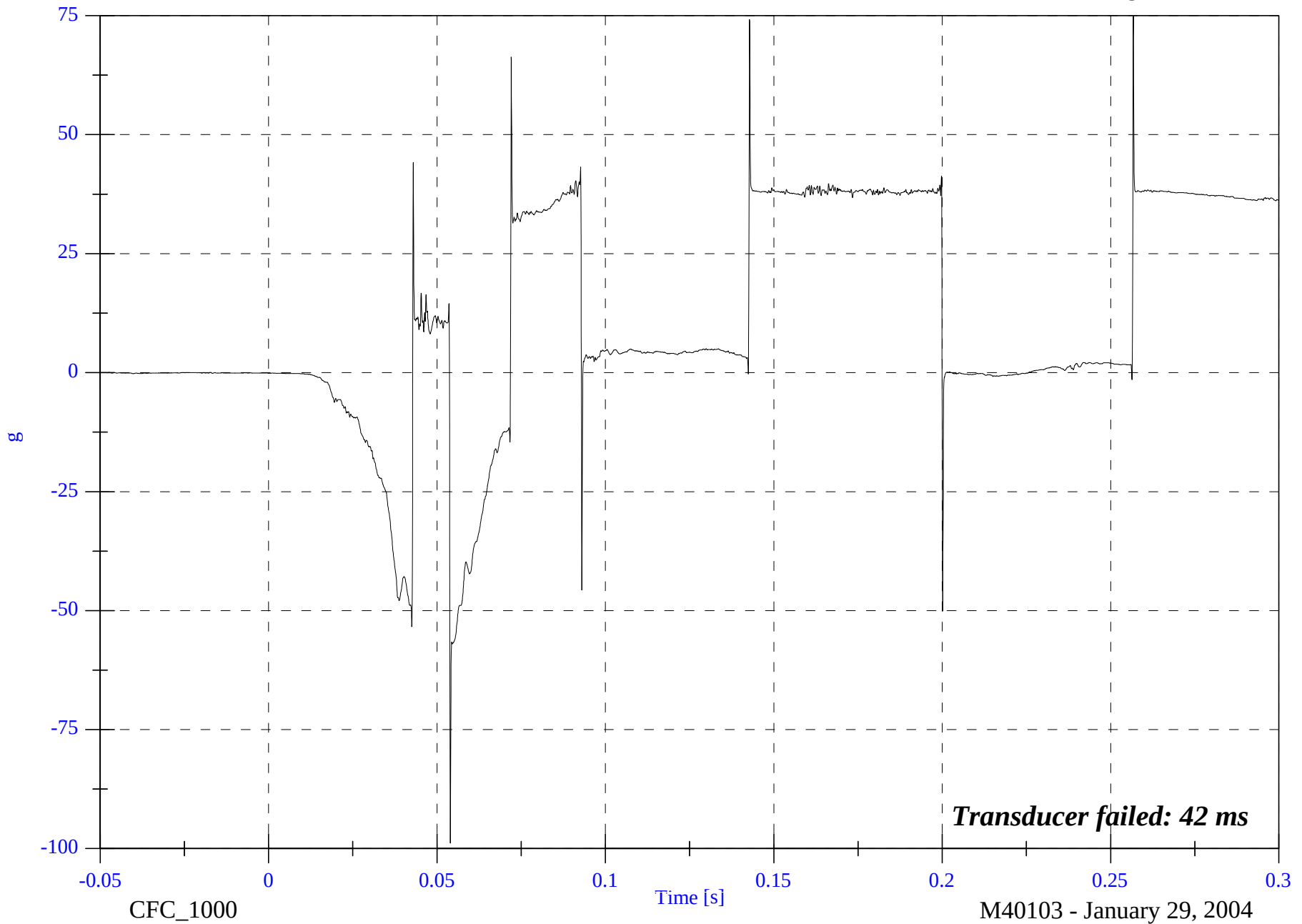
V1P1 Pelvic x

Max: 74.9 [g] at 0.257 [s]

Min: -98.9 [g] at 0.054 [s]

B-39

8642-NCAP-42

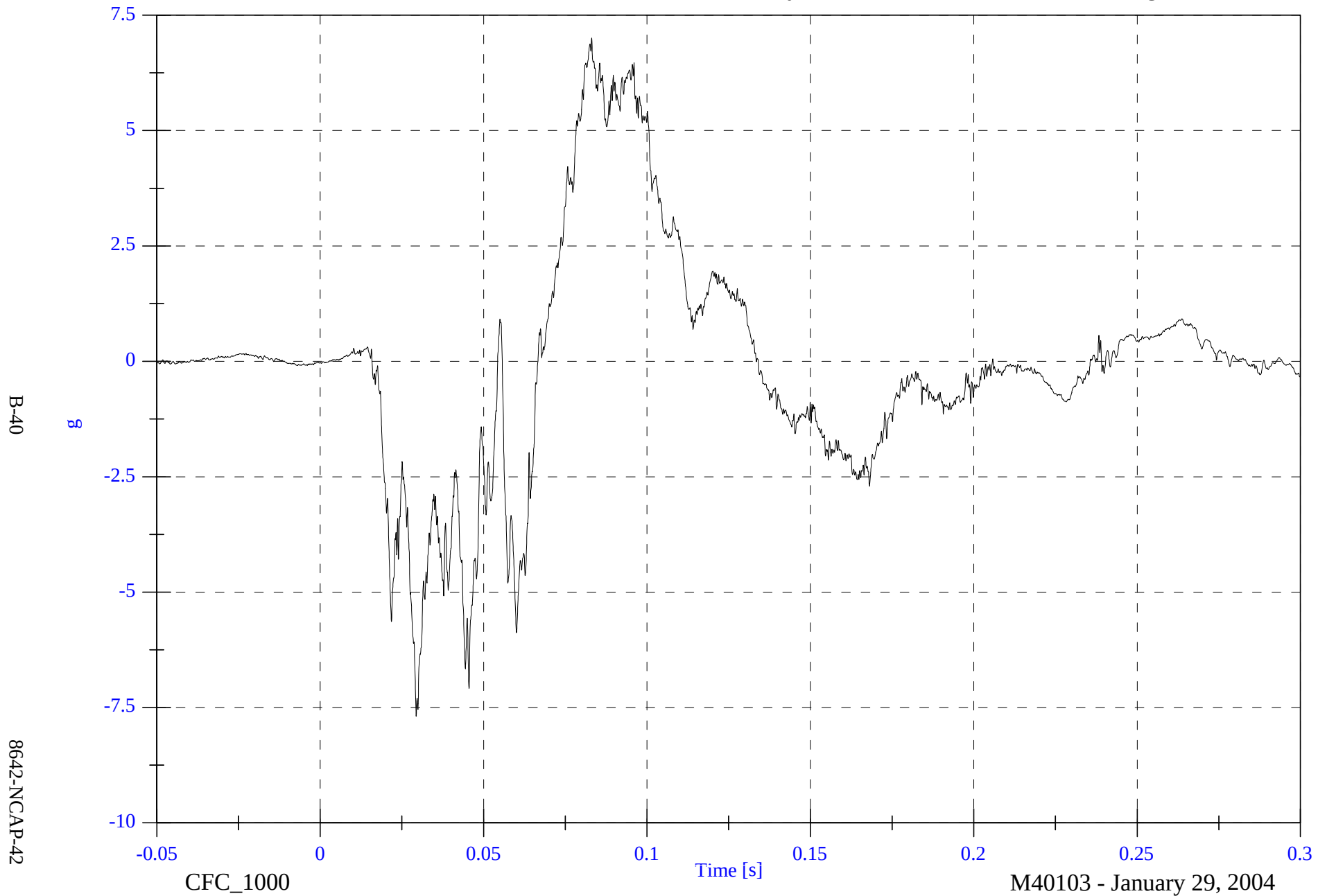


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Pelvic y

Max: 7.0 [g] at 0.083 [s]

Min: -7.7 [g] at 0.029 [s]

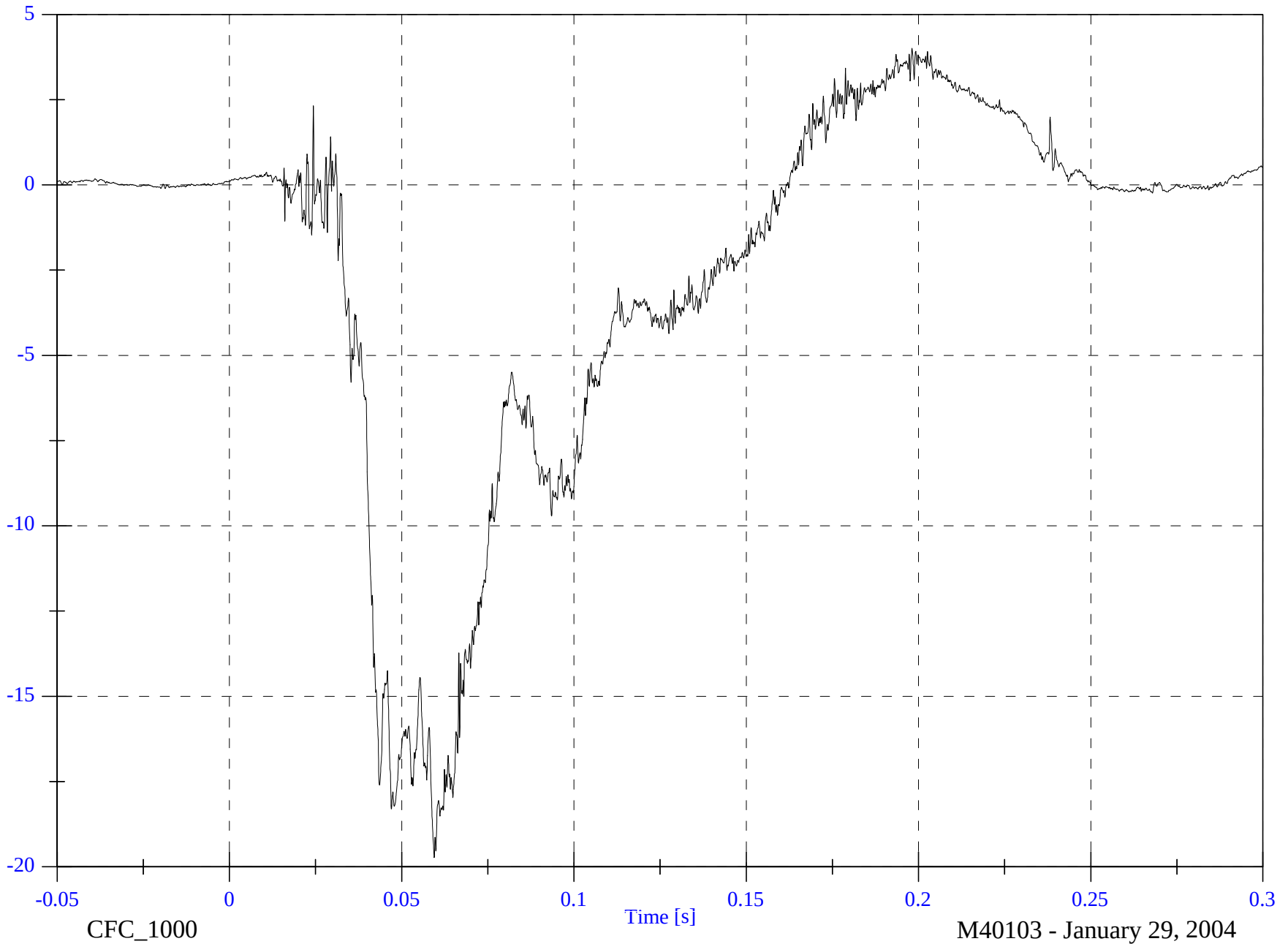


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Pelvic z

Max: 4.0 [g] at 0.198 [s]

Min: -19.7 [g] at 0.059 [s]



B-41

8642-NCAP-42

2004 NCAP Test 6 2004 Chevrolet Colorado

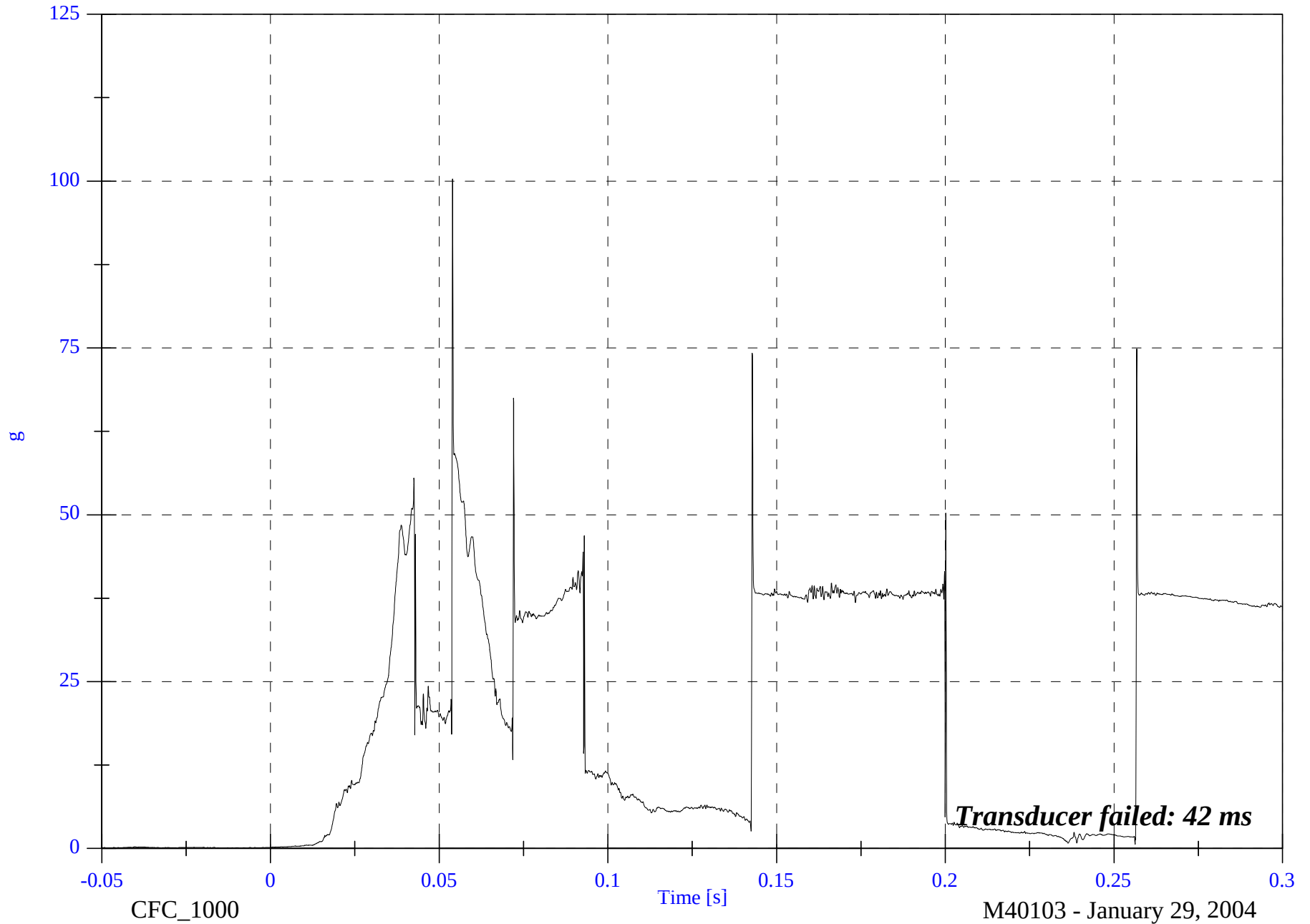
V1P1 Pelvic Resultant

Max: 100.3 [g] at 0.054 [s]

Min: 0.0 [g] at -0.048 [s]

B-42

8642-NCAP-42

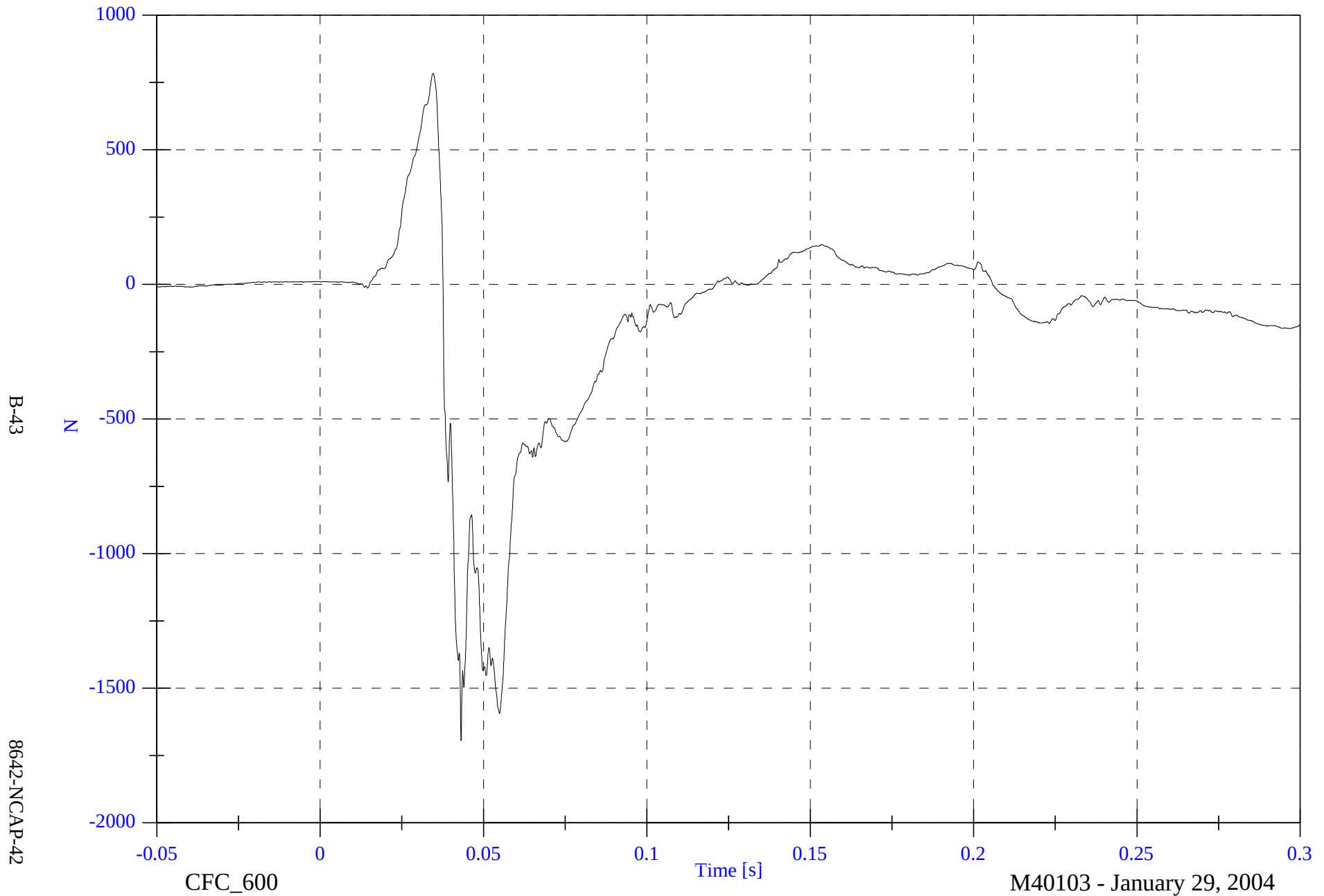


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Left Femur z

Max: 783.5 [N] at 0.035 [s]

Min: -1694.1 [N] at 0.043 [s]

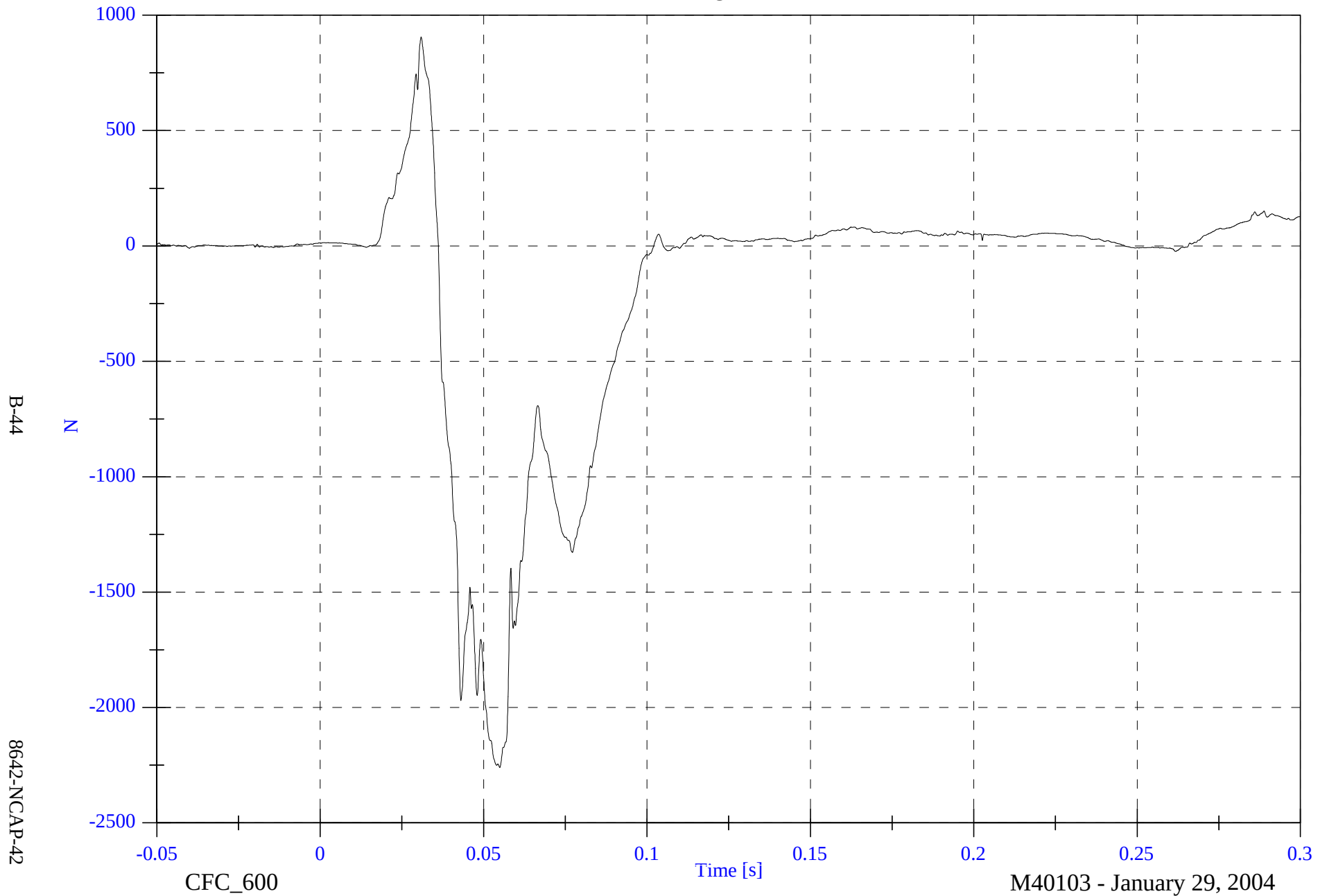


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Right Femur z

Max: 905.5 [N] at 0.031 [s]

Min: -2260.6 [N] at 0.055 [s]

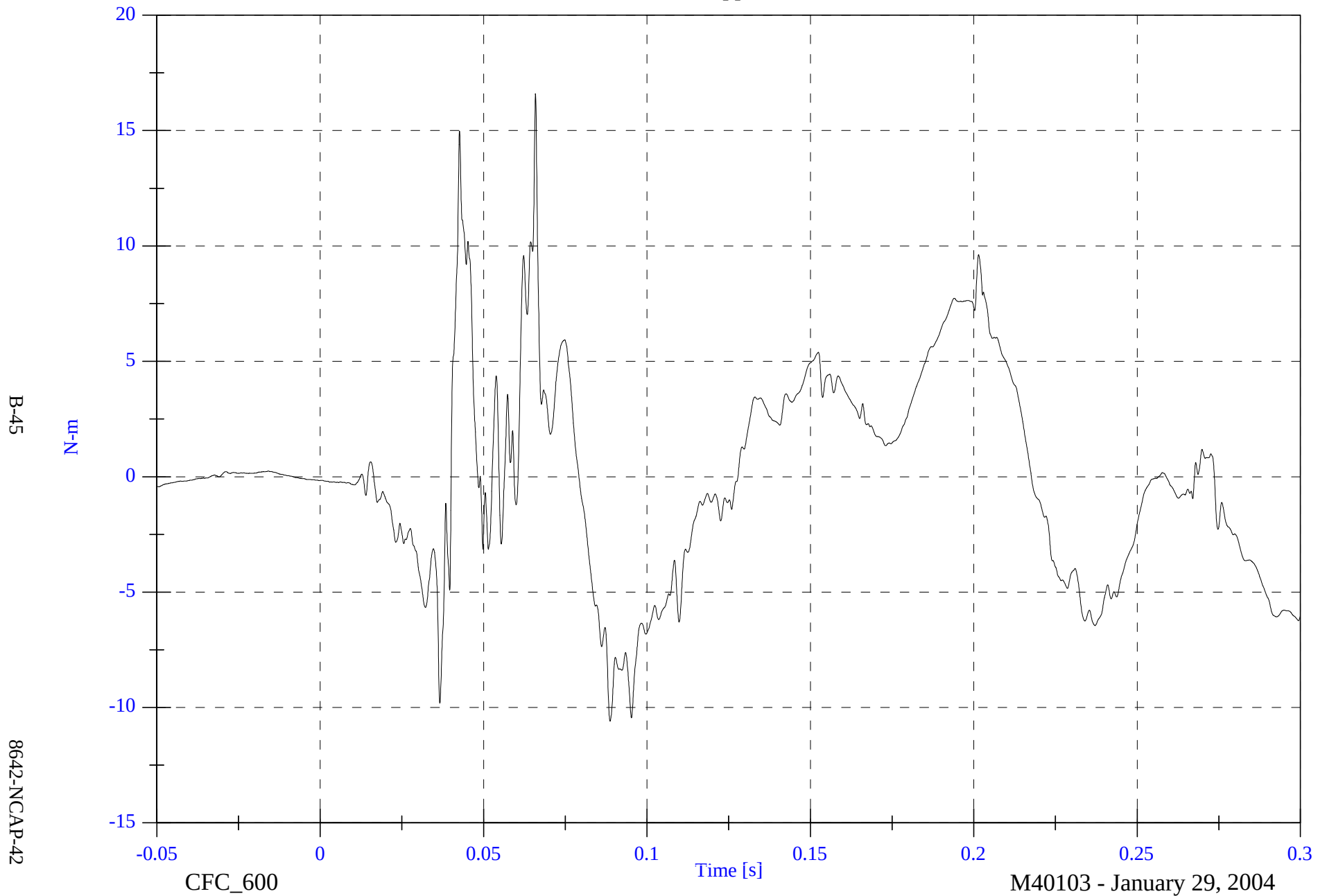


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Left Upper Tibia Mx

Max: 16.6 [N-m] at 0.066 [s]

Min: -10.6 [N-m] at 0.089 [s]

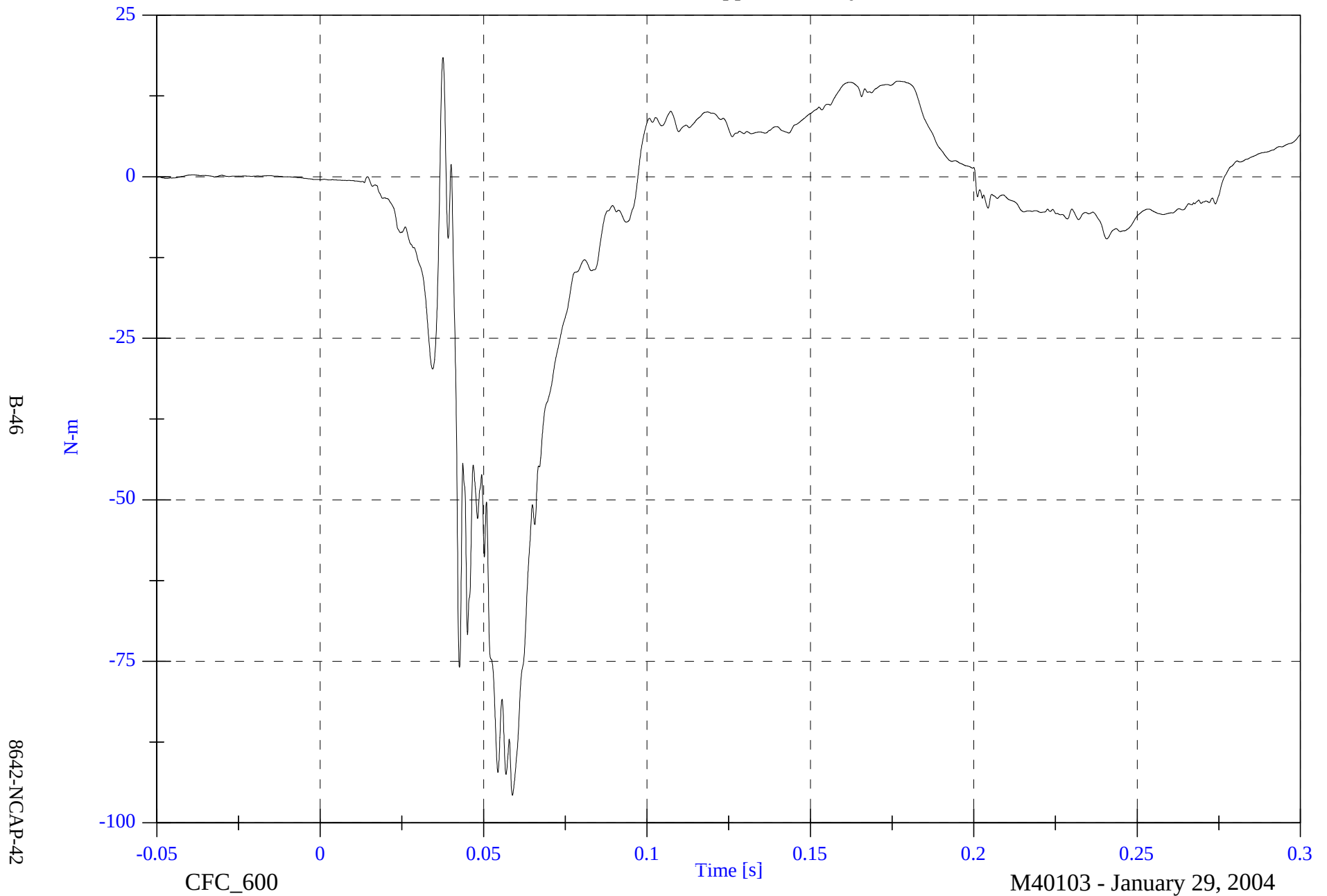


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Left Upper Tibia My

Max: 18.4 [N-m] at 0.038 [s]

Min: -95.7 [N-m] at 0.059 [s]

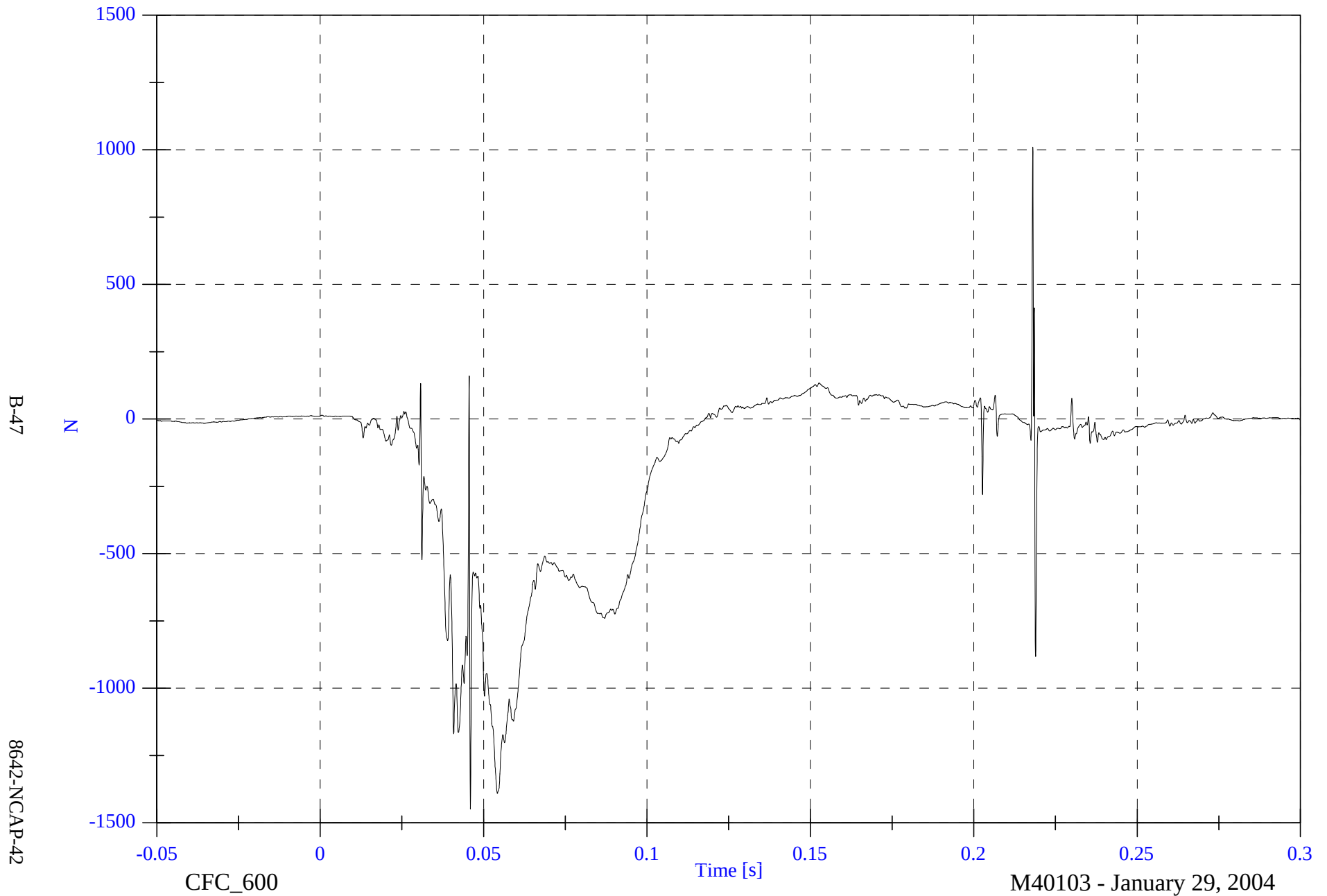


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Left Lower Tibia Fz

Max: 1010.2 [N] at 0.218 [s]

Min: -1448.9 [N] at 0.046 [s]

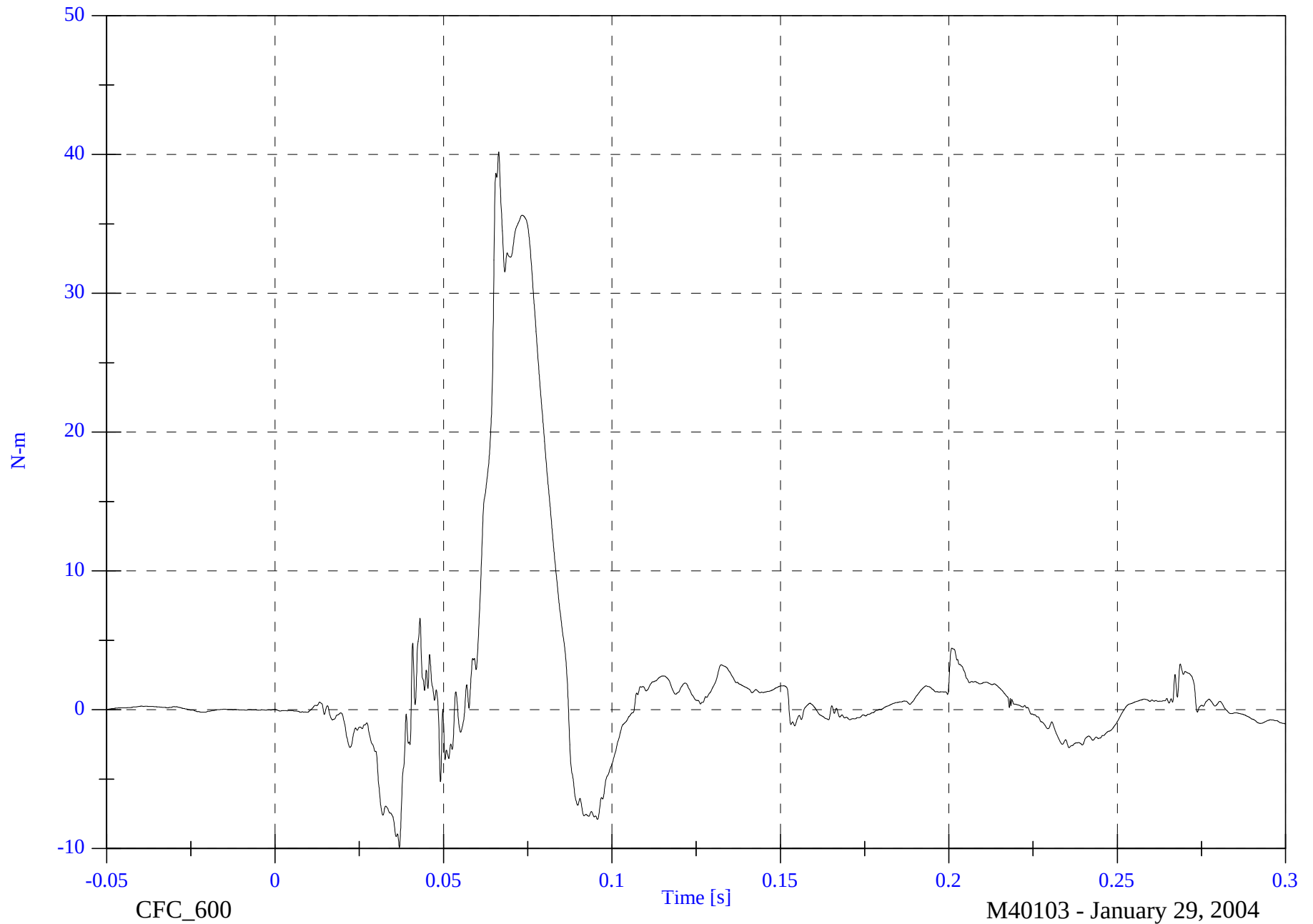


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Left Lower Tibia Mx

Max: 40.2 [N-m] at 0.066 [s]

Min: -9.9 [N-m] at 0.037 [s]



B-48

8642-NCAP-42

CFC_600

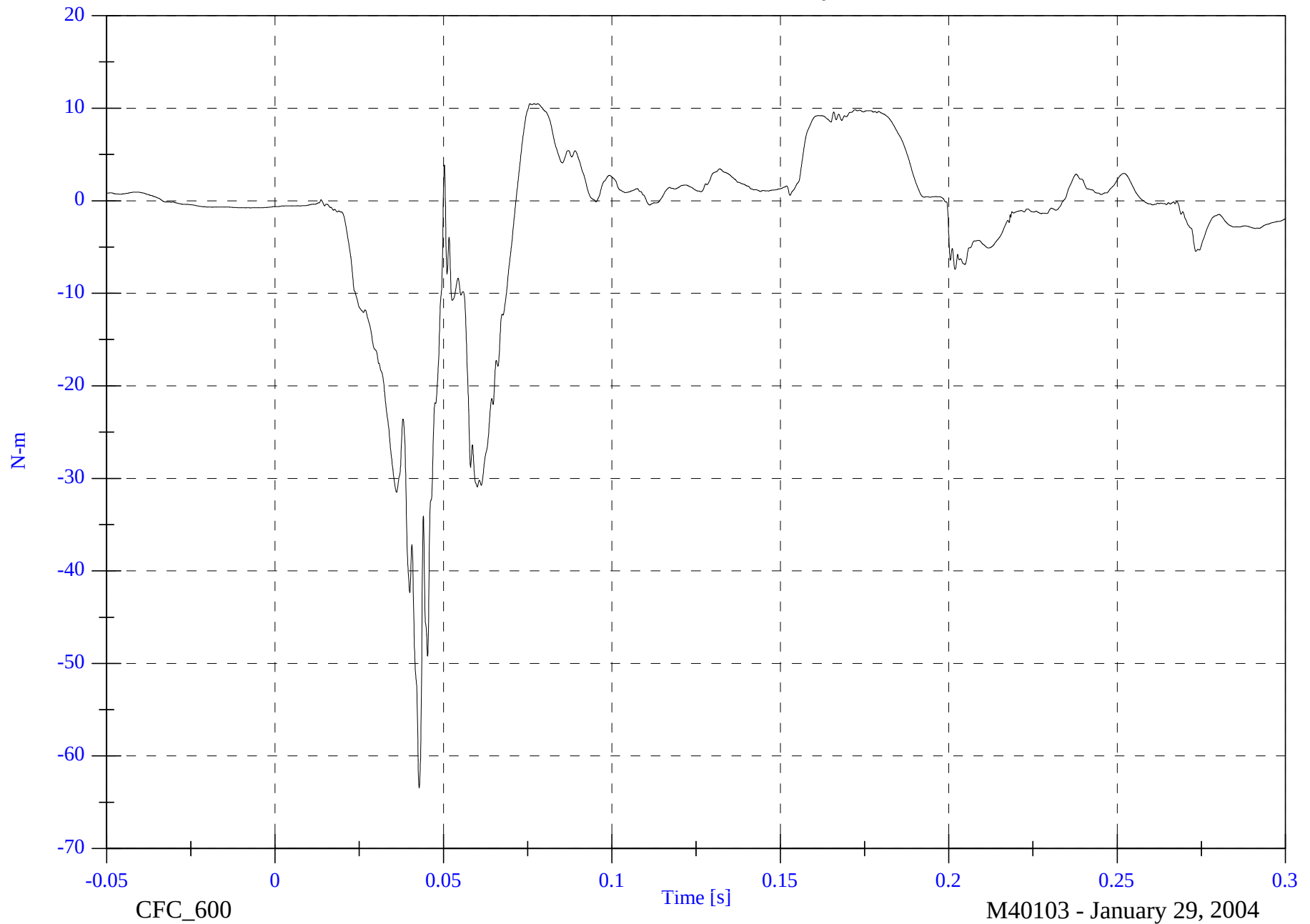
M40103 - January 29, 2004

2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Left Lower Tibia My

Max: 10.5 [N-m] at 0.077 [s]

Min: -63.5 [N-m] at 0.043 [s]

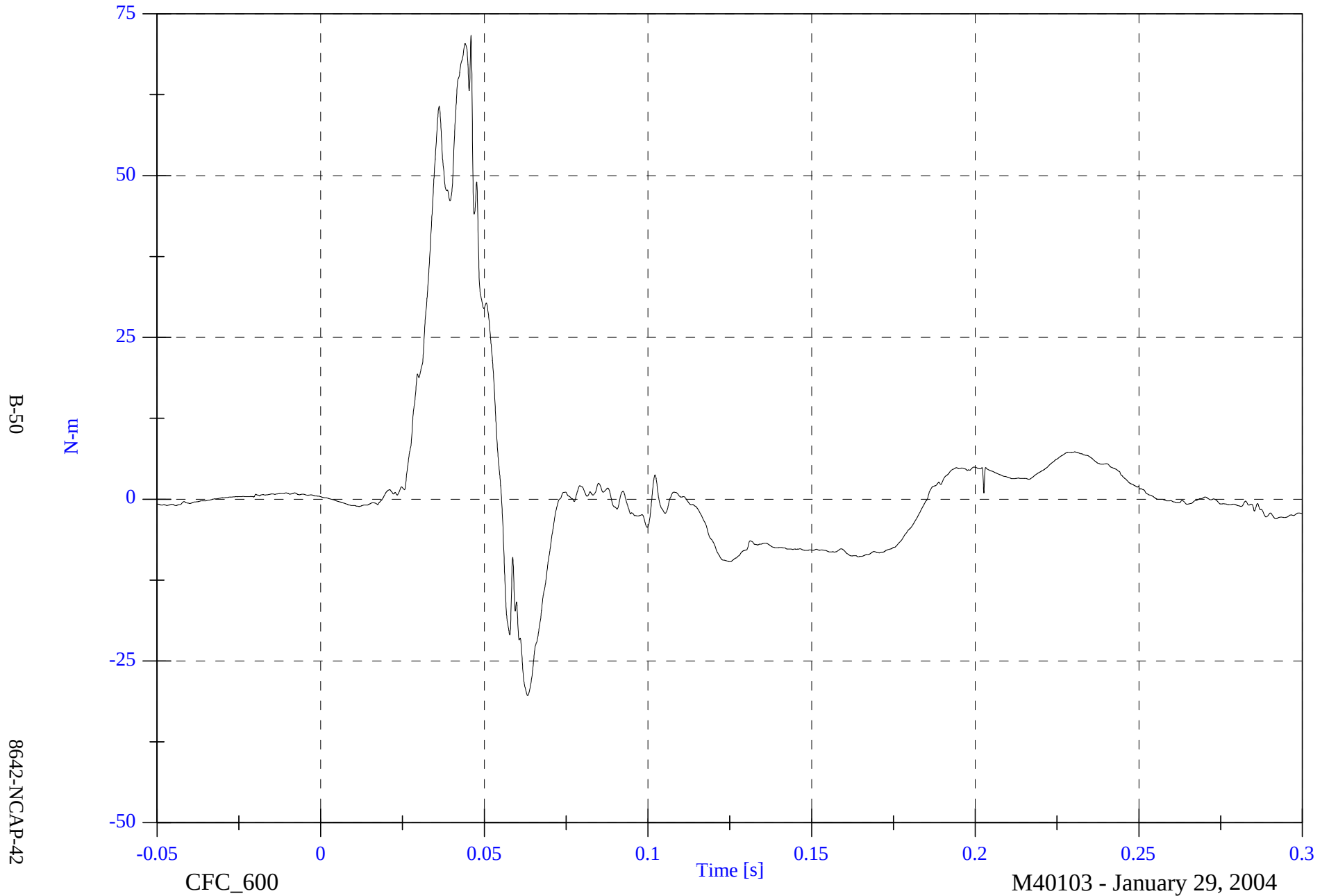


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Right Upper Tibia Mx

Max: 71.7 [N-m] at 0.046 [s]

Min: -30.3 [N-m] at 0.063 [s]

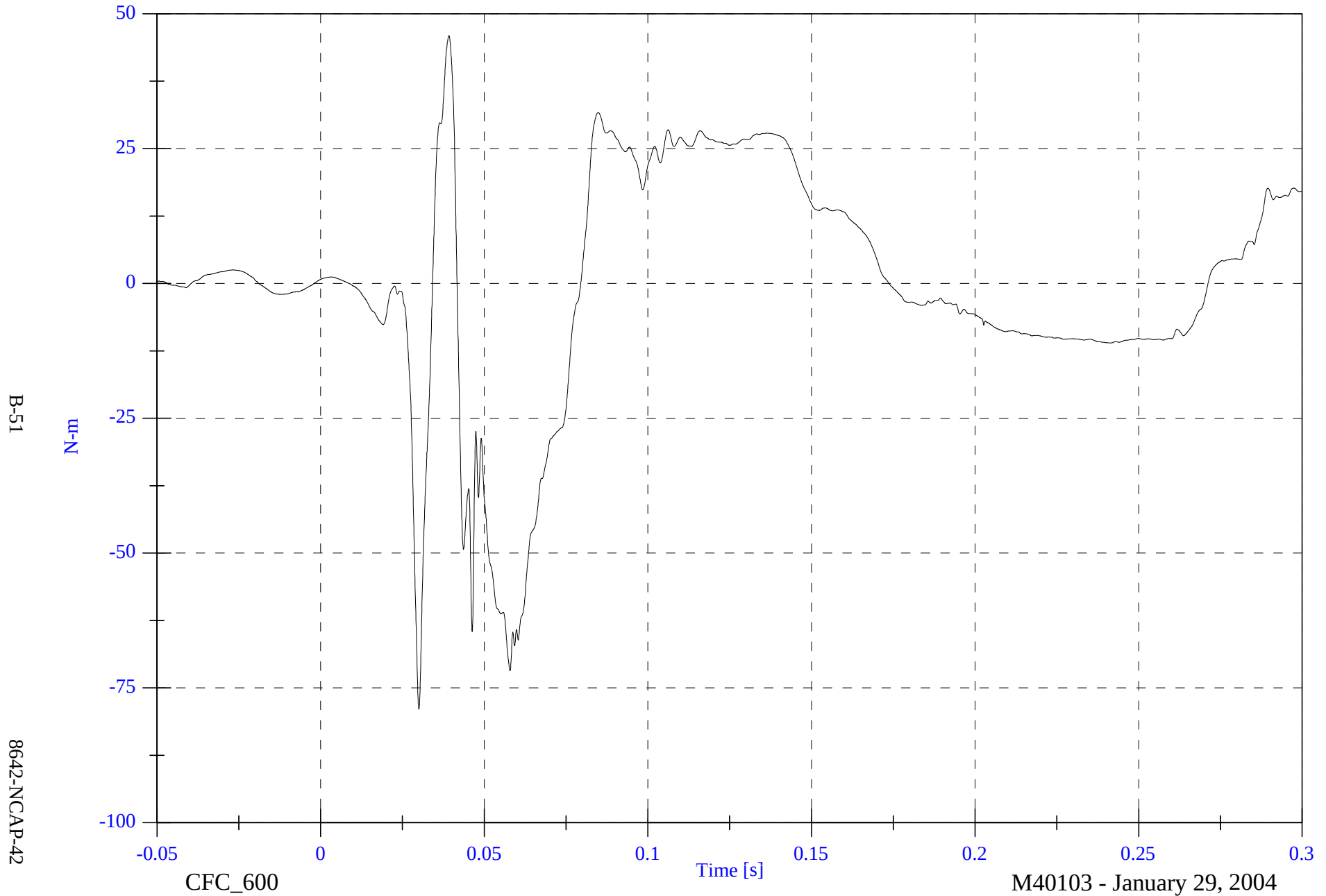


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Right Upper Tibia My

Max: 45.9 [N-m] at 0.039 [s]

Min: -79.0 [N-m] at 0.030 [s]

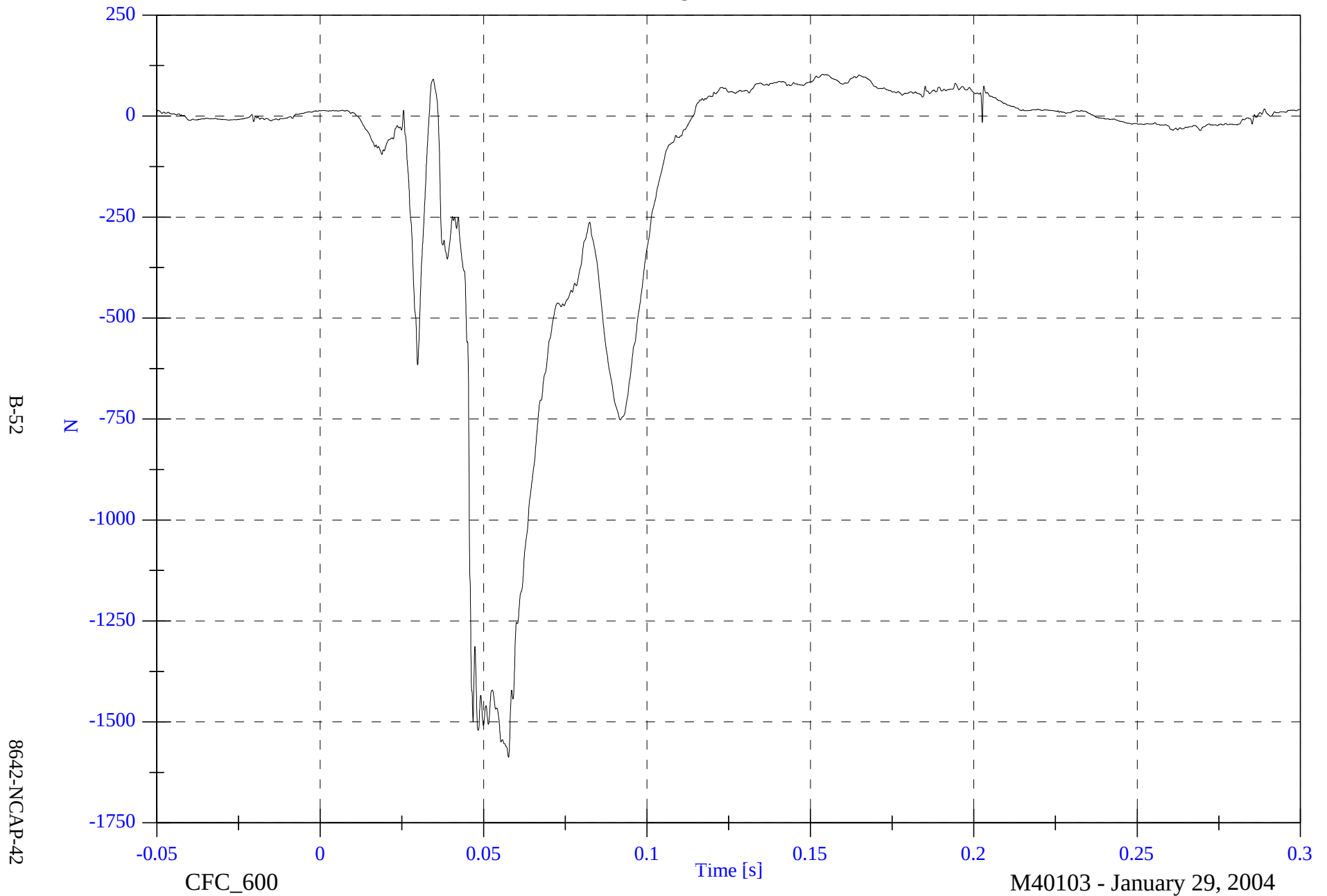


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Right Lower Tibia Fz

Max: 103.4 [N] at 0.154 [s]

Min: -1587.7 [N] at 0.058 [s]

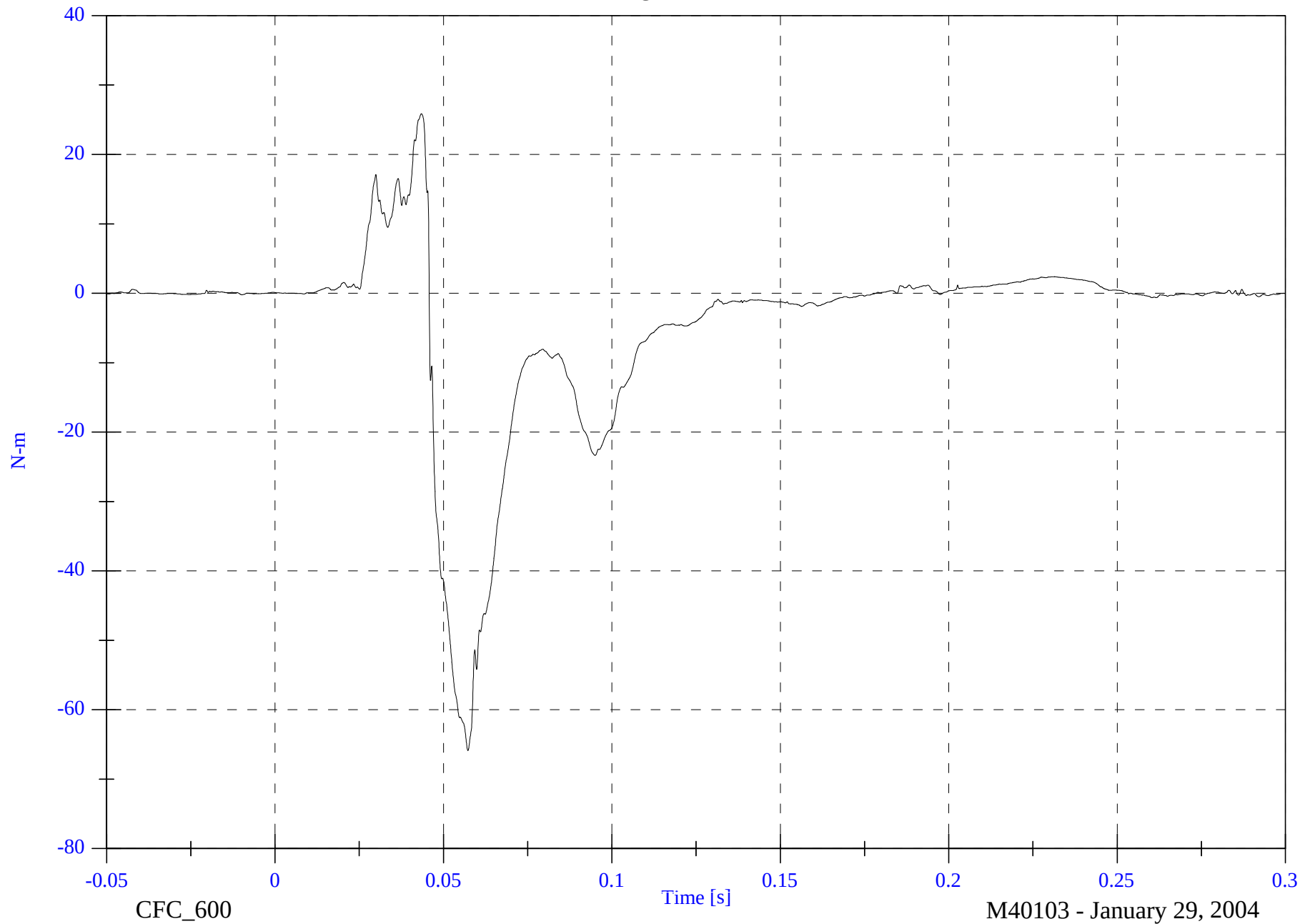


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Right Lower Tibia Mx

Max: 25.9 [N-m] at 0.043 [s]

Min: -65.9 [N-m] at 0.057 [s]

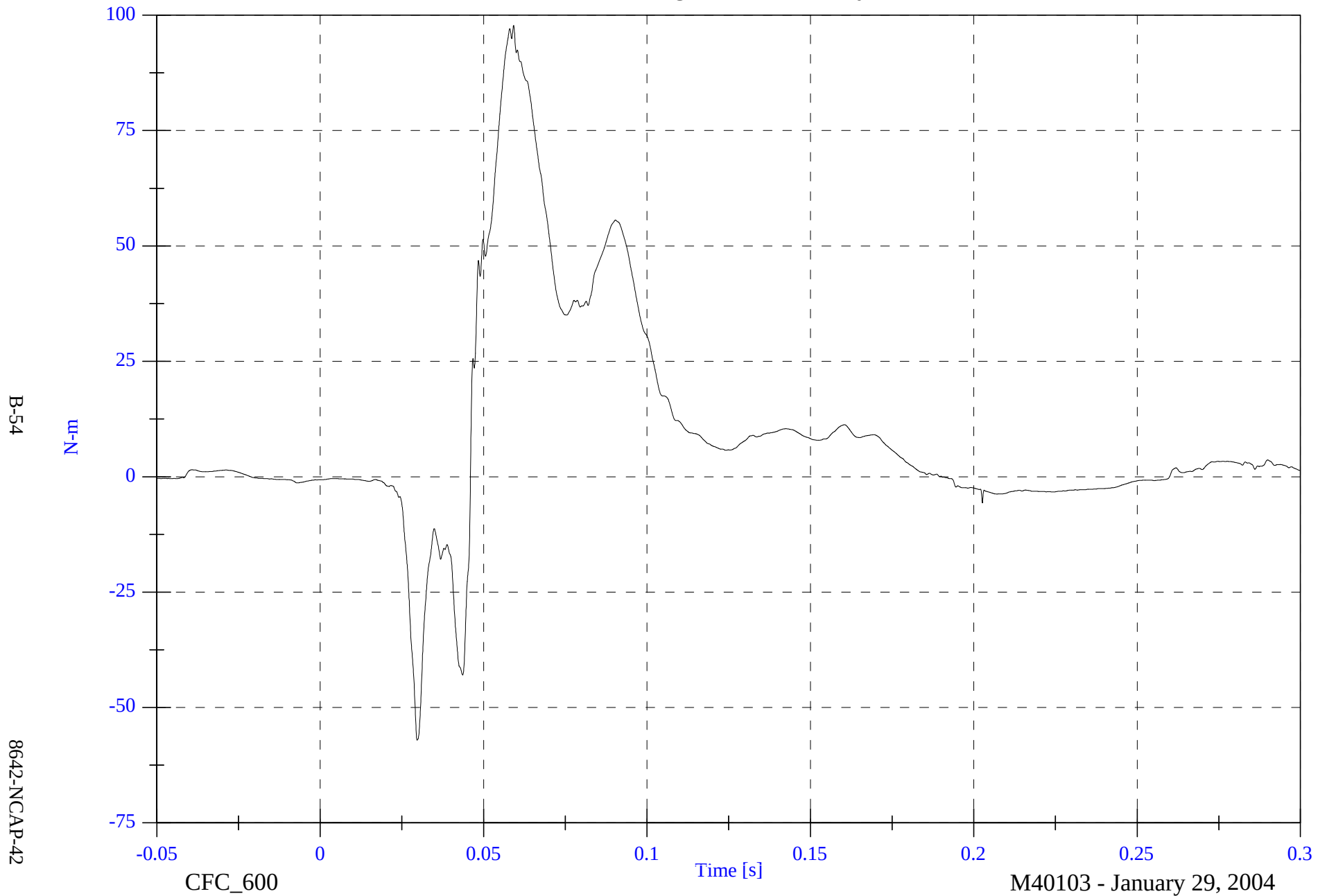


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Right Lower Tibia My

Max: 97.8 [N-m] at 0.059 [s]

Min: -57.1 [N-m] at 0.030 [s]

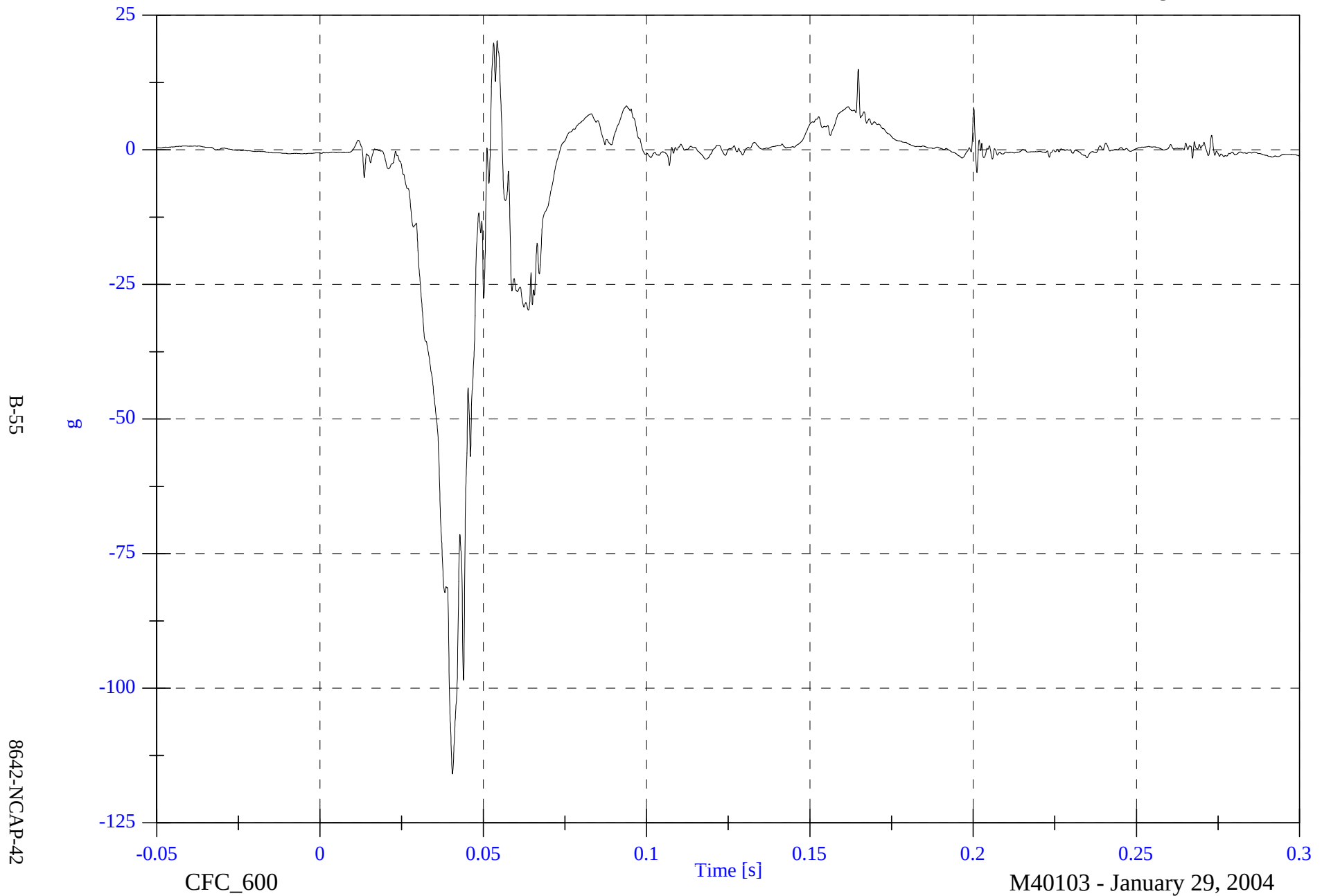


2004 NCAP Test 6 2004 Chevrolet Colorado

Max: 20.3 [g] at 0.054 [s]

Min: -115.9 [g] at 0.041 [s]

V1P1 Left Foot Aft x

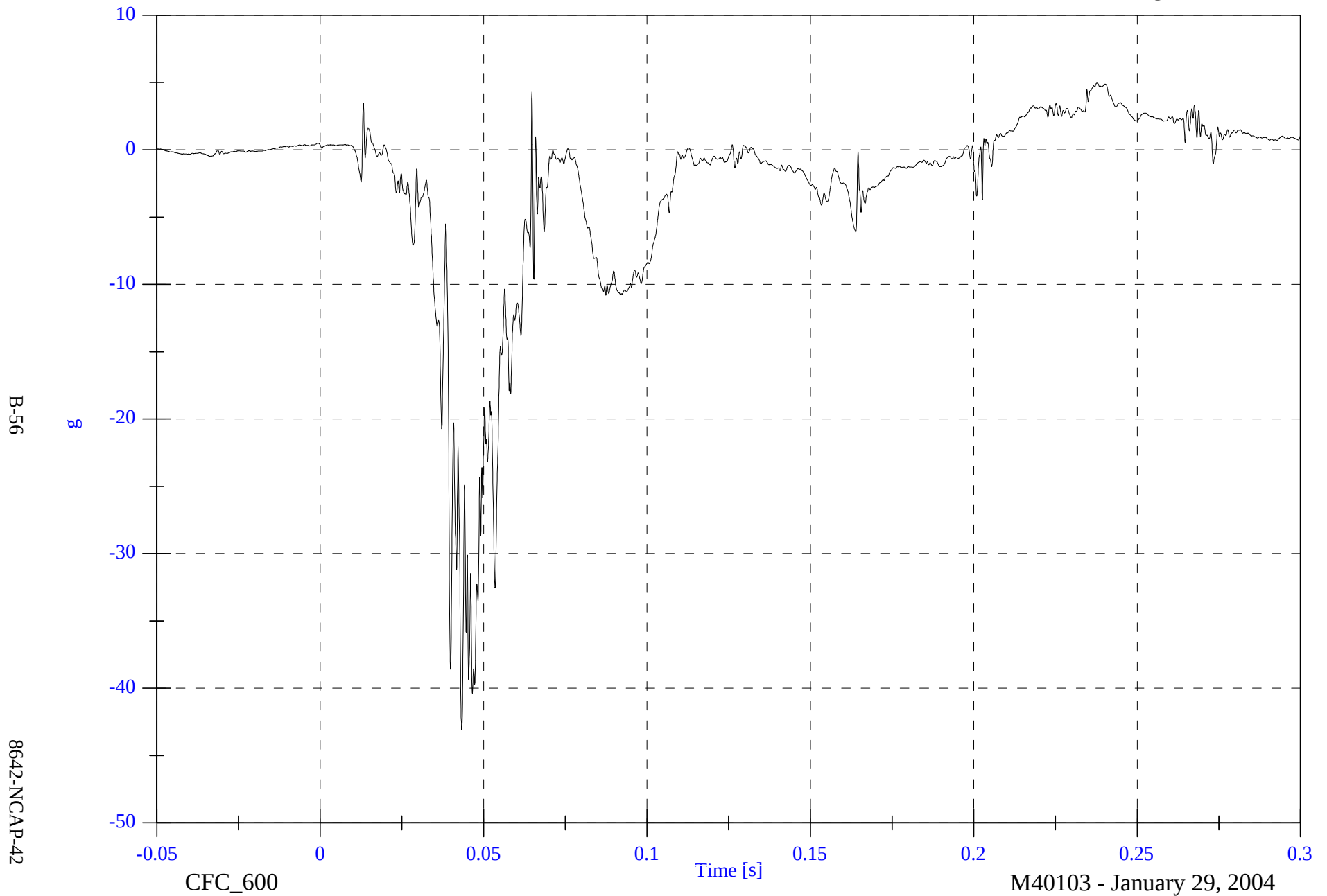


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Left Foot Aft z

Max: 5.0 [g] at 0.238 [s]

Min: -43.1 [g] at 0.043 [s]

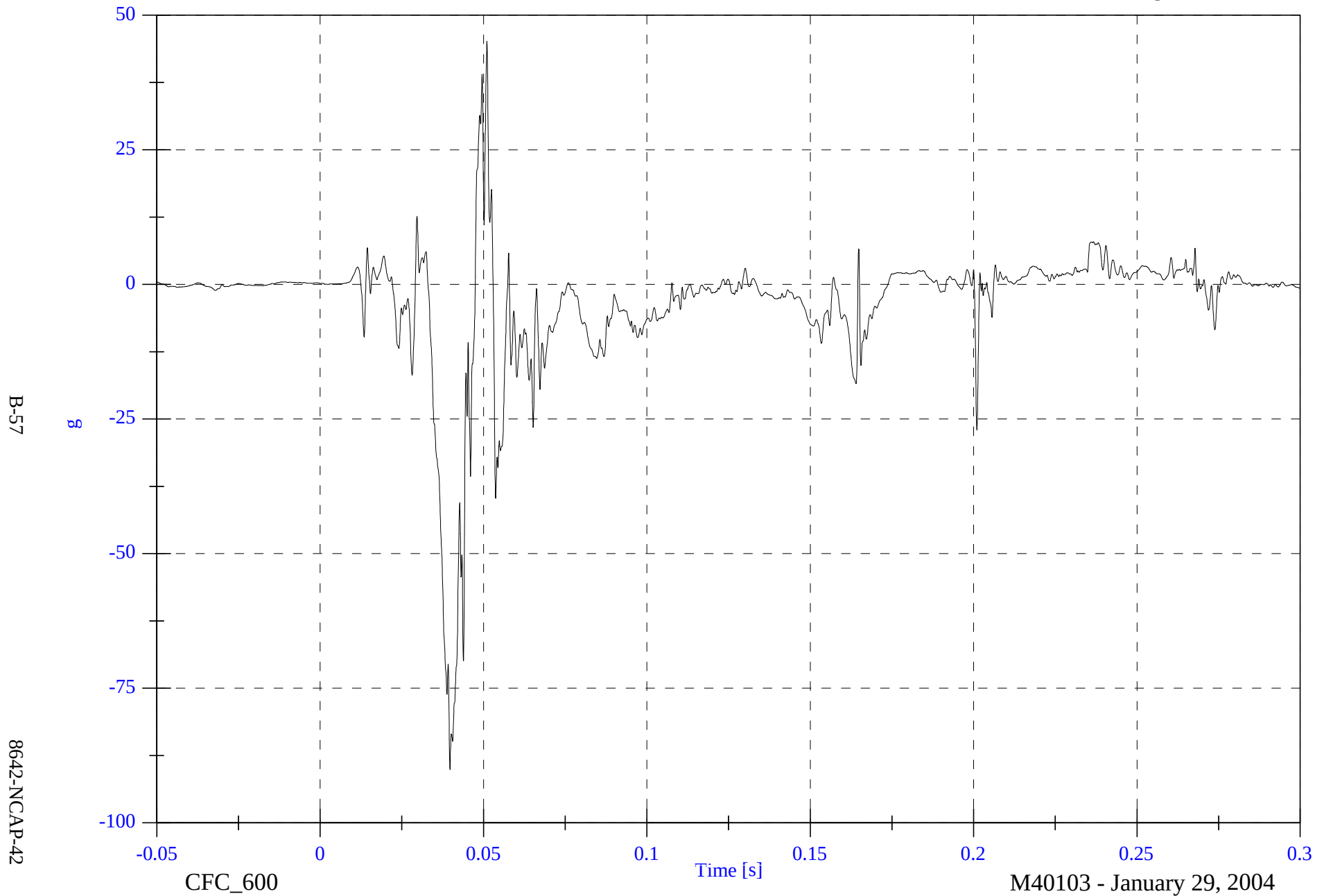


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Left Foot Fore z

Max: 45.1 [g] at 0.051 [s]

Min: -90.1 [g] at 0.040 [s]

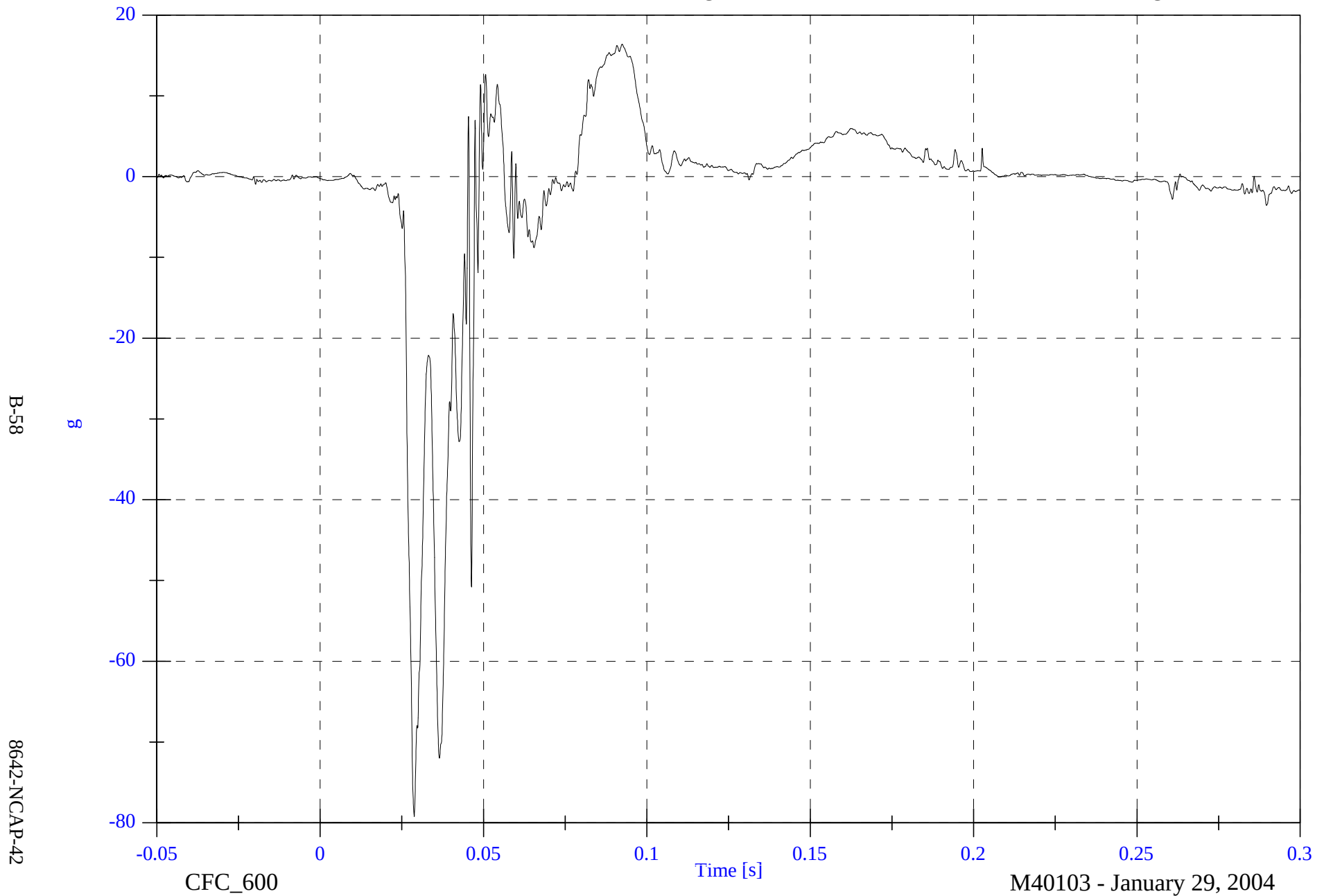


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Right Foot Aft x

Max: 16.4 [g] at 0.092 [s]

Min: -79.2 [g] at 0.029 [s]

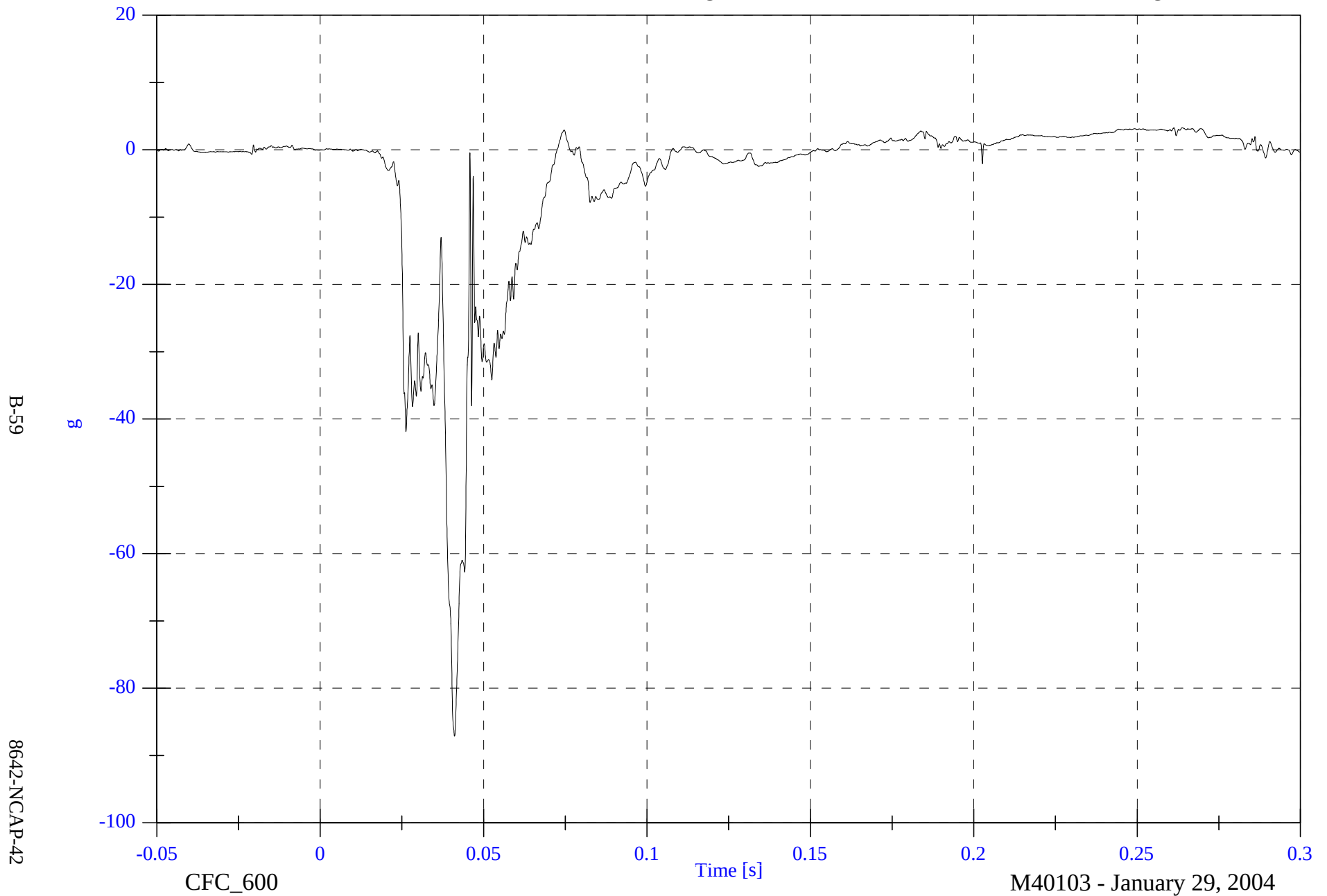


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Right Foot Aft z

Max: 3.3 [g] at 0.264 [s]

Min: -87.1 [g] at 0.041 [s]

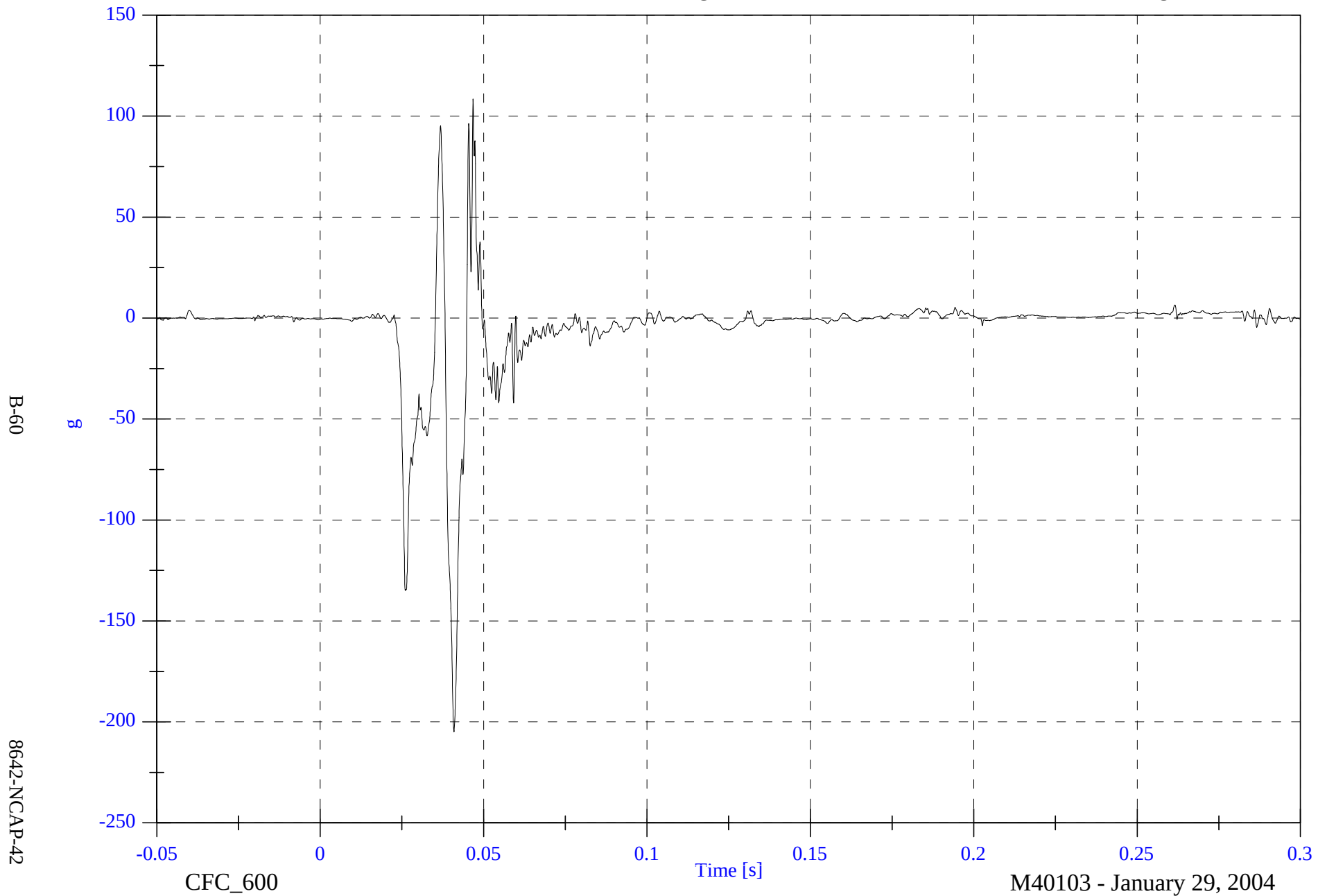


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P1 Right Foot Fore z

Max: 108.5 [g] at 0.047 [s]

Min: -204.9 [g] at 0.041 [s]

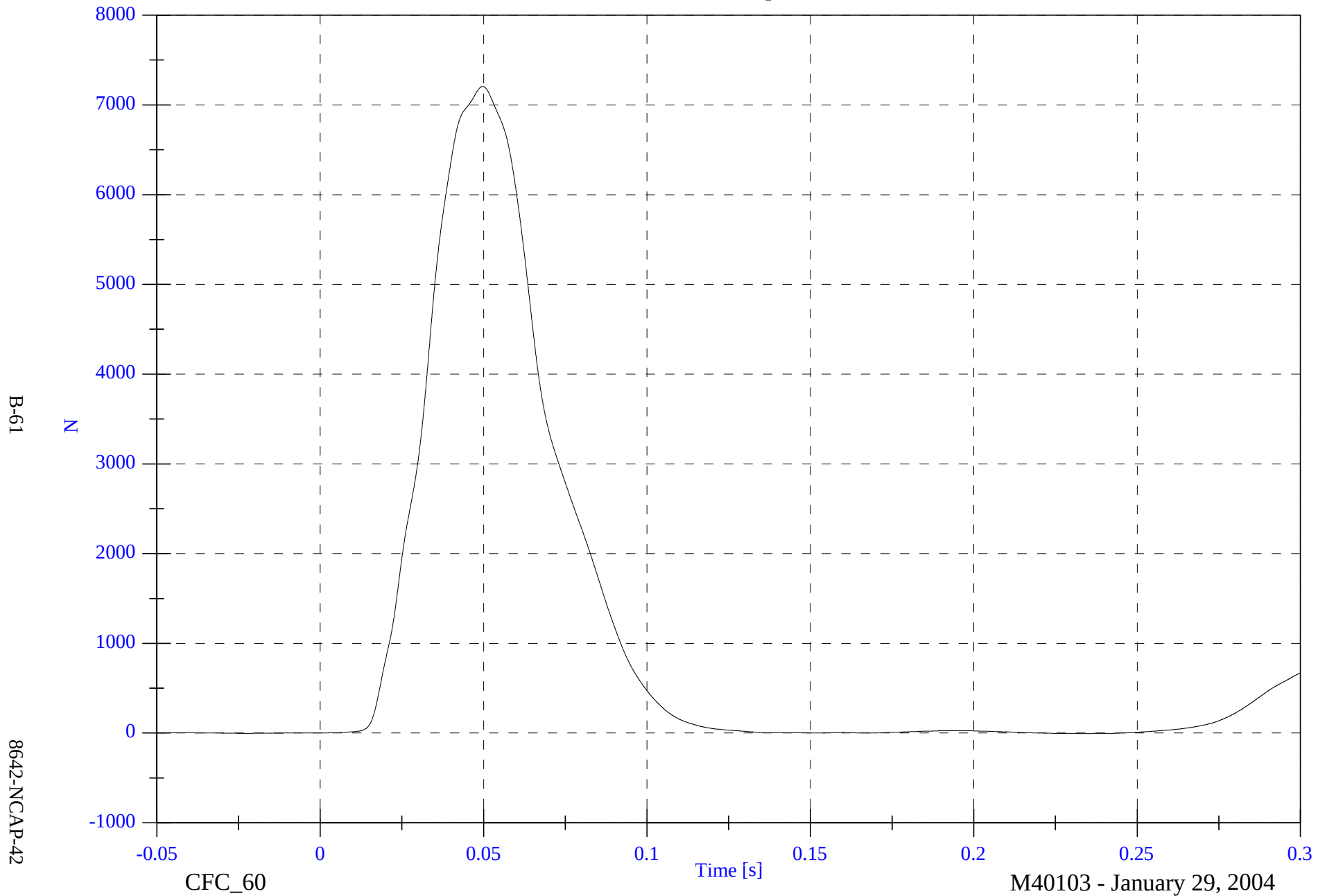


2004 NCAP Test 6 2004 Chevrolet Colorado

V1 Driver Lap Belt

Max: 7205.9 [N] at 0.050 [s]

Min: -5.0 [N] at 0.234 [s]

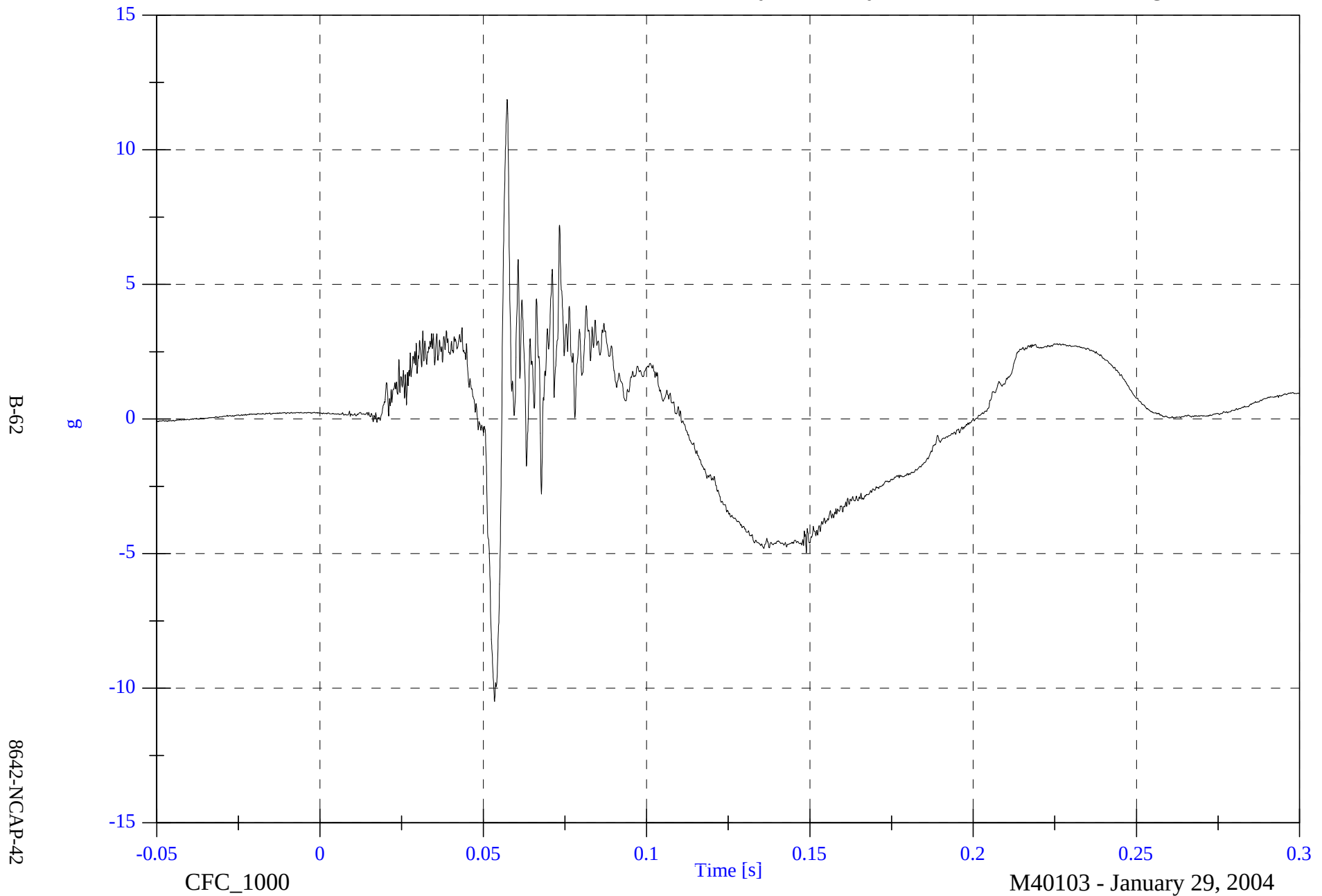


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Head 9 Array X Arm Ay

Max: 11.9 [g] at 0.057 [s]

Min: -10.5 [g] at 0.053 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

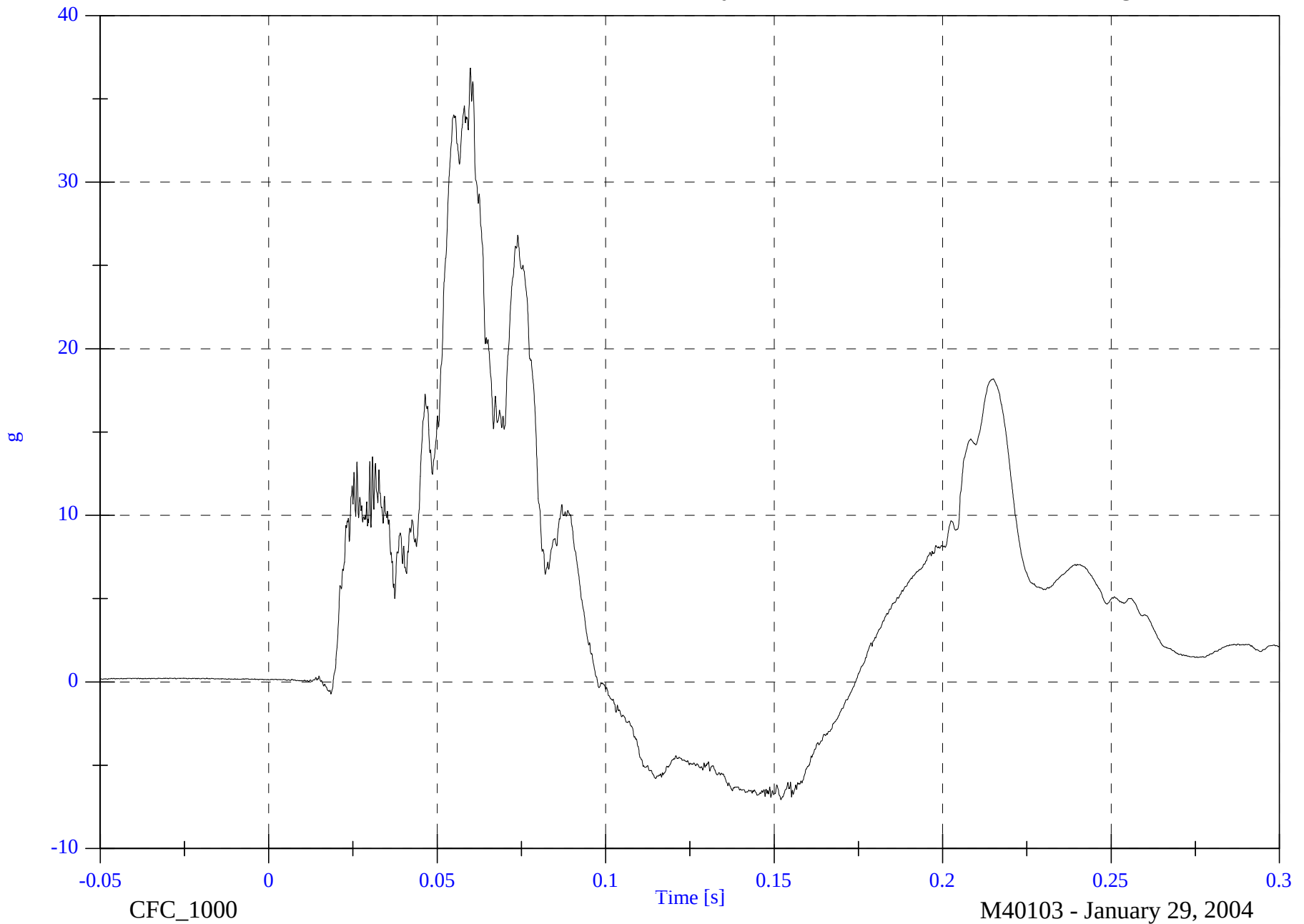
V1P2 Head 9 Array X Arm Az

Max: 36.9 [g] at 0.060 [s]

Min: -7.1 [g] at 0.152 [s]

B-63

8642-NCAP-42

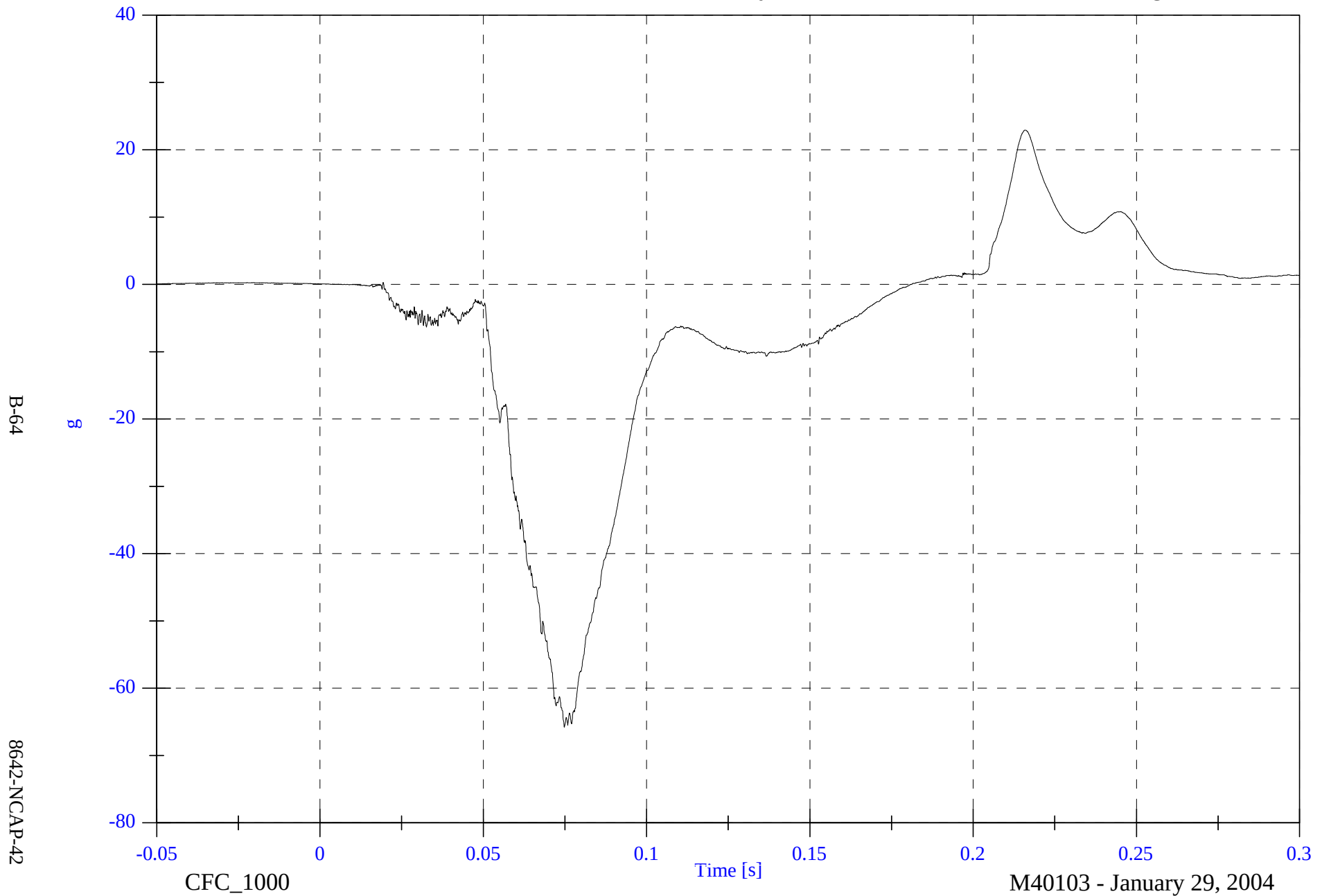


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Head 9 Array Y Arm Ax

Max: 22.9 [g] at 0.216 [s]

Min: -65.8 [g] at 0.075 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

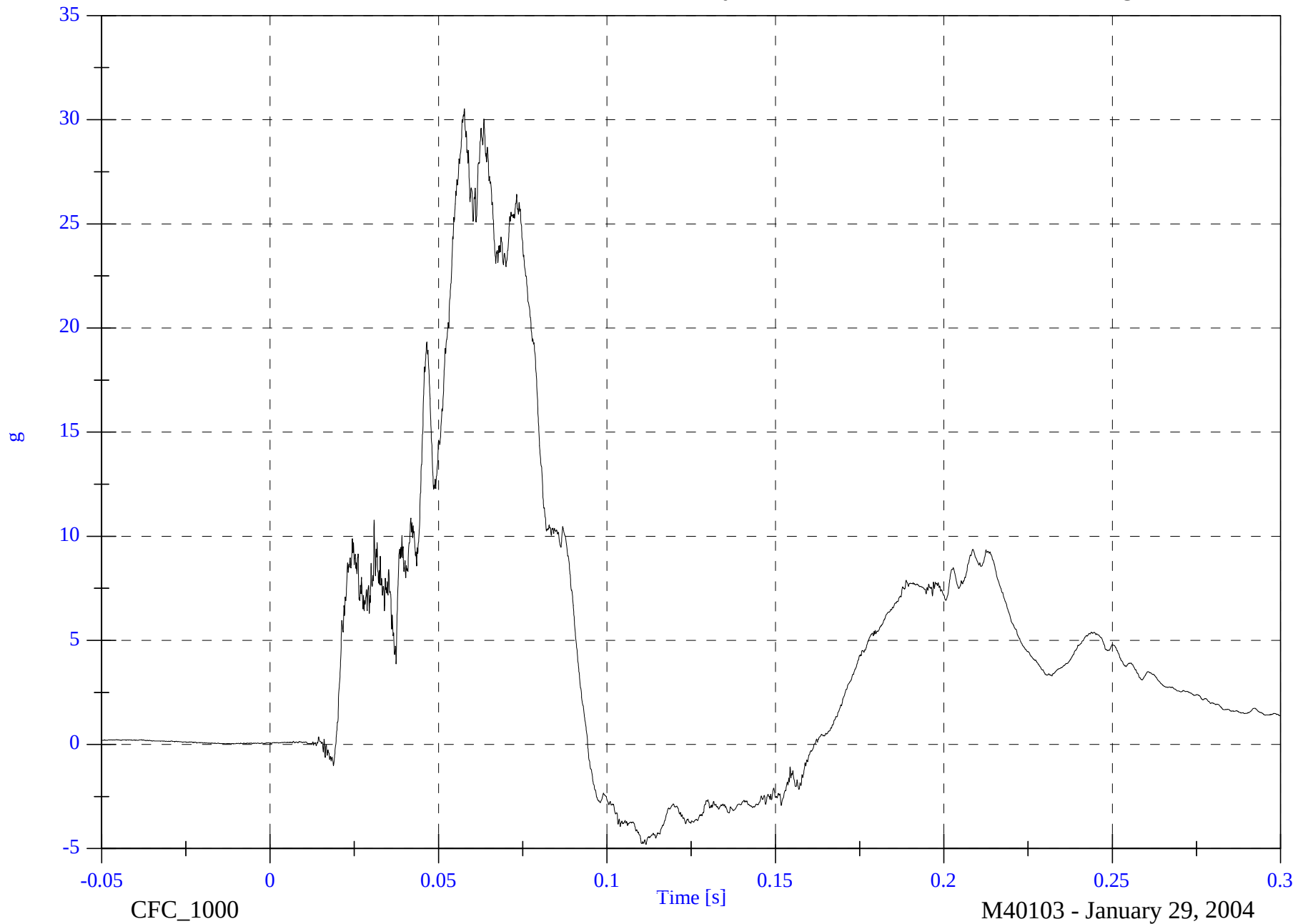
V1P2 Head 9 Array Y Arm Az

Max: 30.5 [g] at 0.058 [s]

Min: -4.8 [g] at 0.112 [s]

B-65

8642-NCAP-42

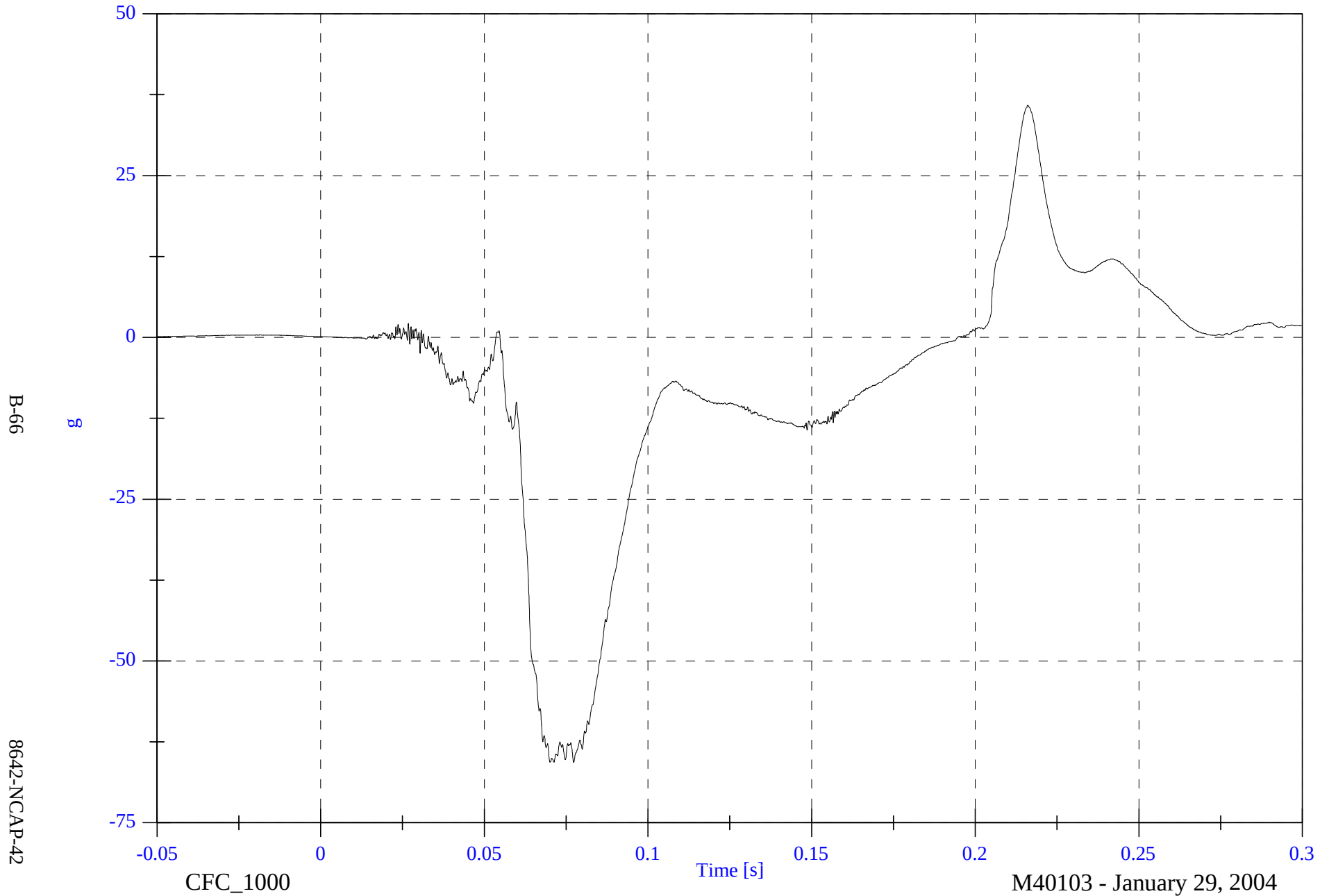


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Head 9 Array Z Arm Ax

Max: 35.9 [g] at 0.216 [s]

Min: -65.7 [g] at 0.077 [s]

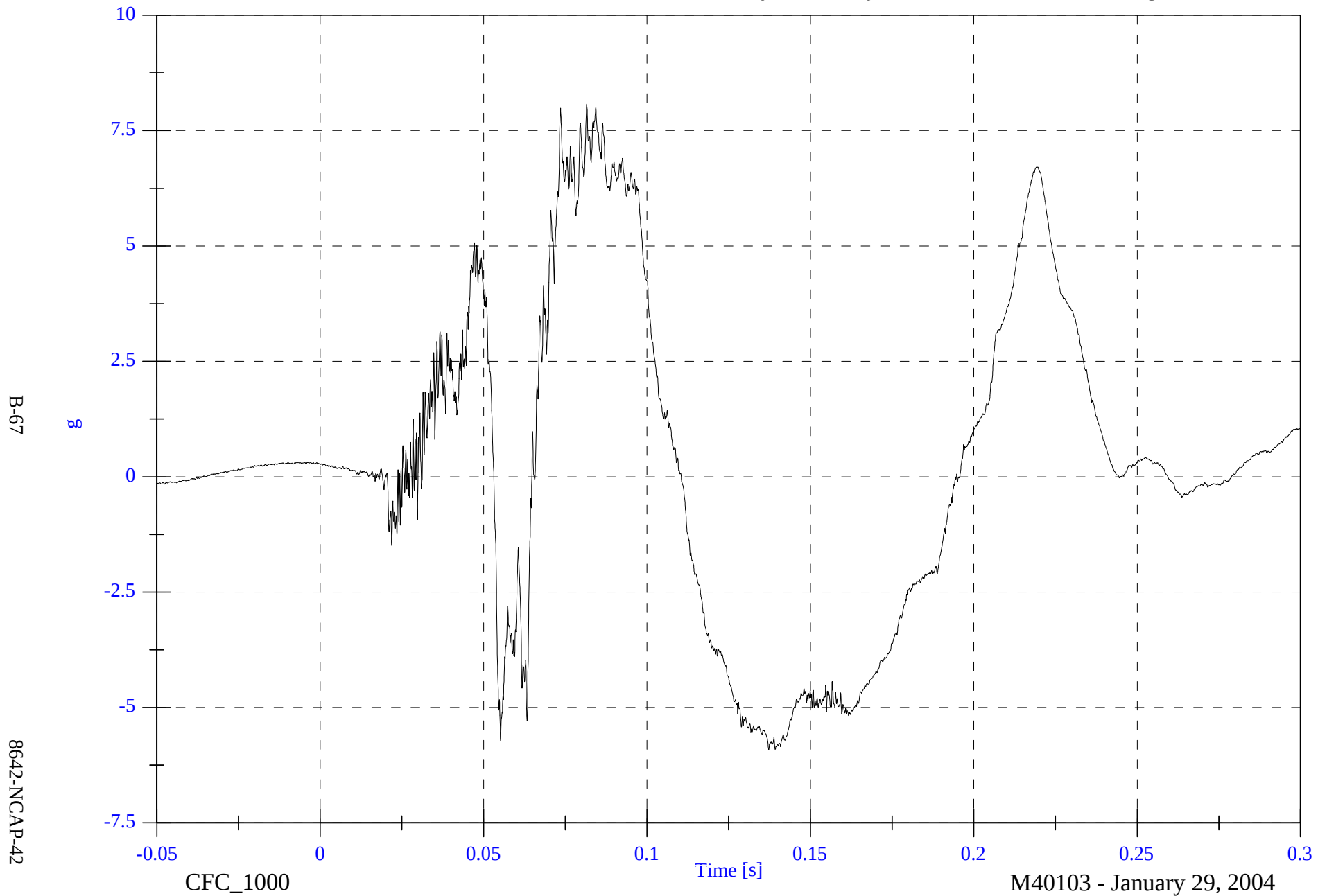


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Head 9 Array Z Arm Ay

Max: 8.1 [g] at 0.082 [s]

Min: -5.9 [g] at 0.137 [s]

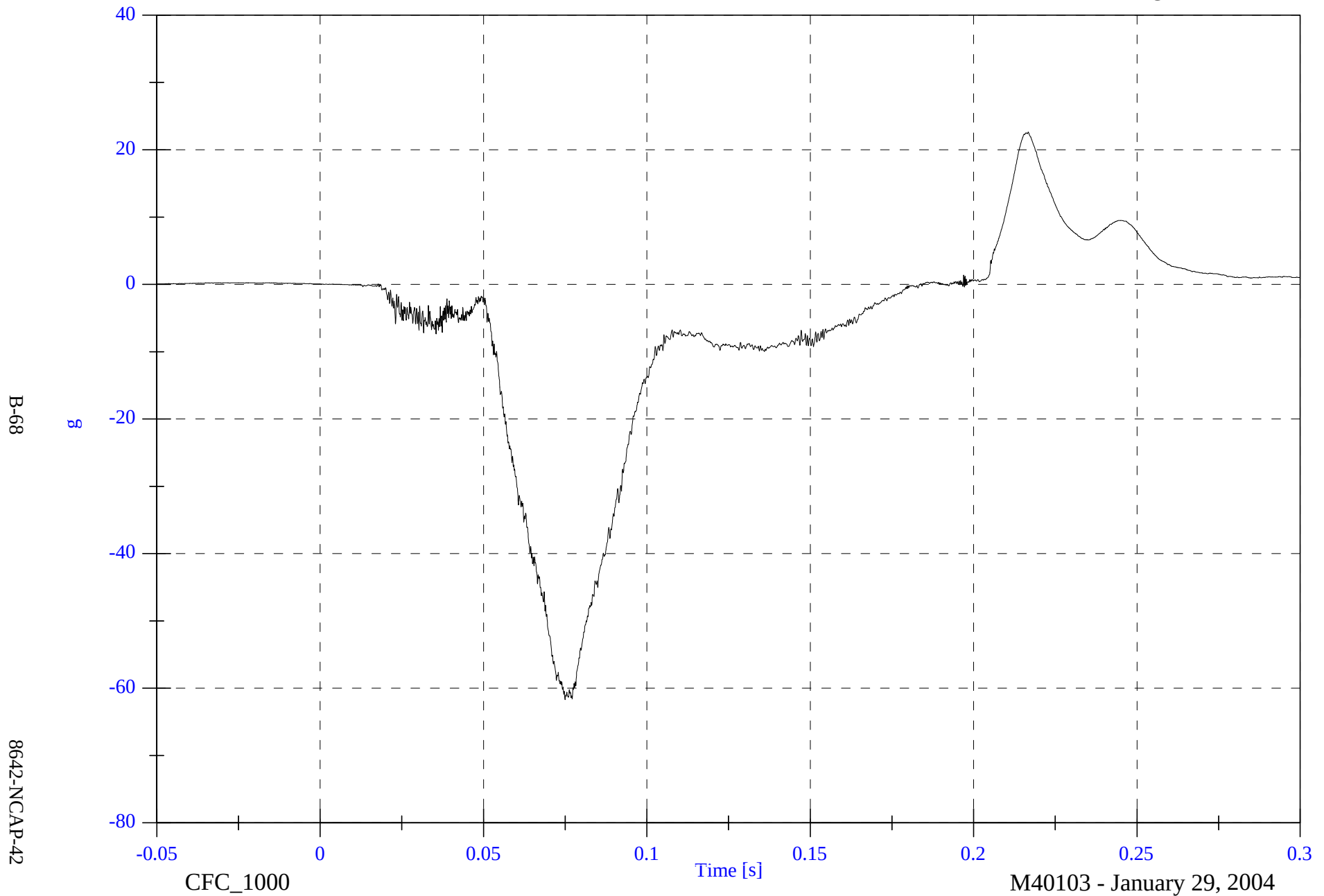


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Head CG x

Max: 22.6 [g] at 0.217 [s]

Min: -61.7 [g] at 0.075 [s]

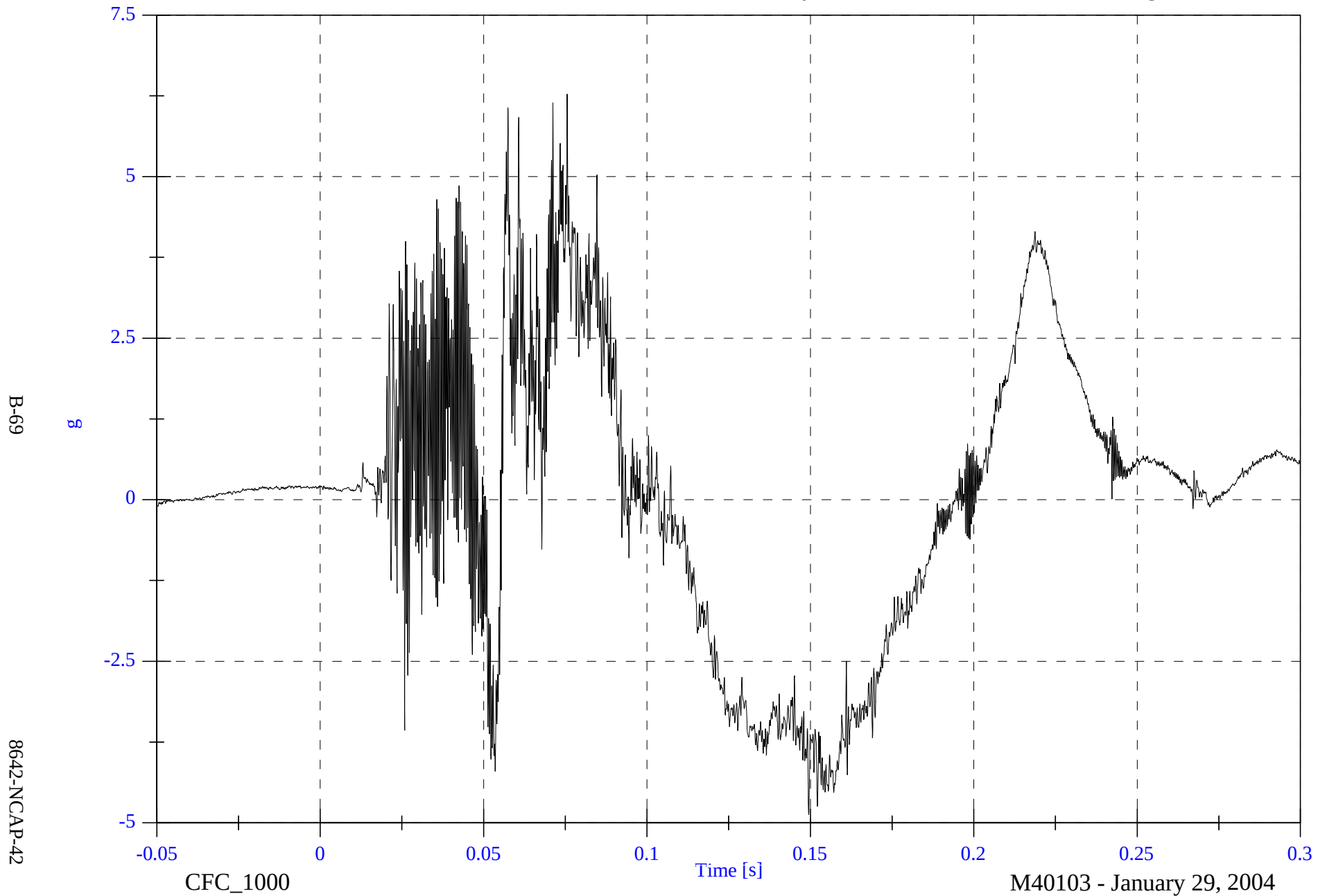


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Head CG y

Max: 6.3 [g] at 0.076 [s]

Min: -4.9 [g] at 0.149 [s]

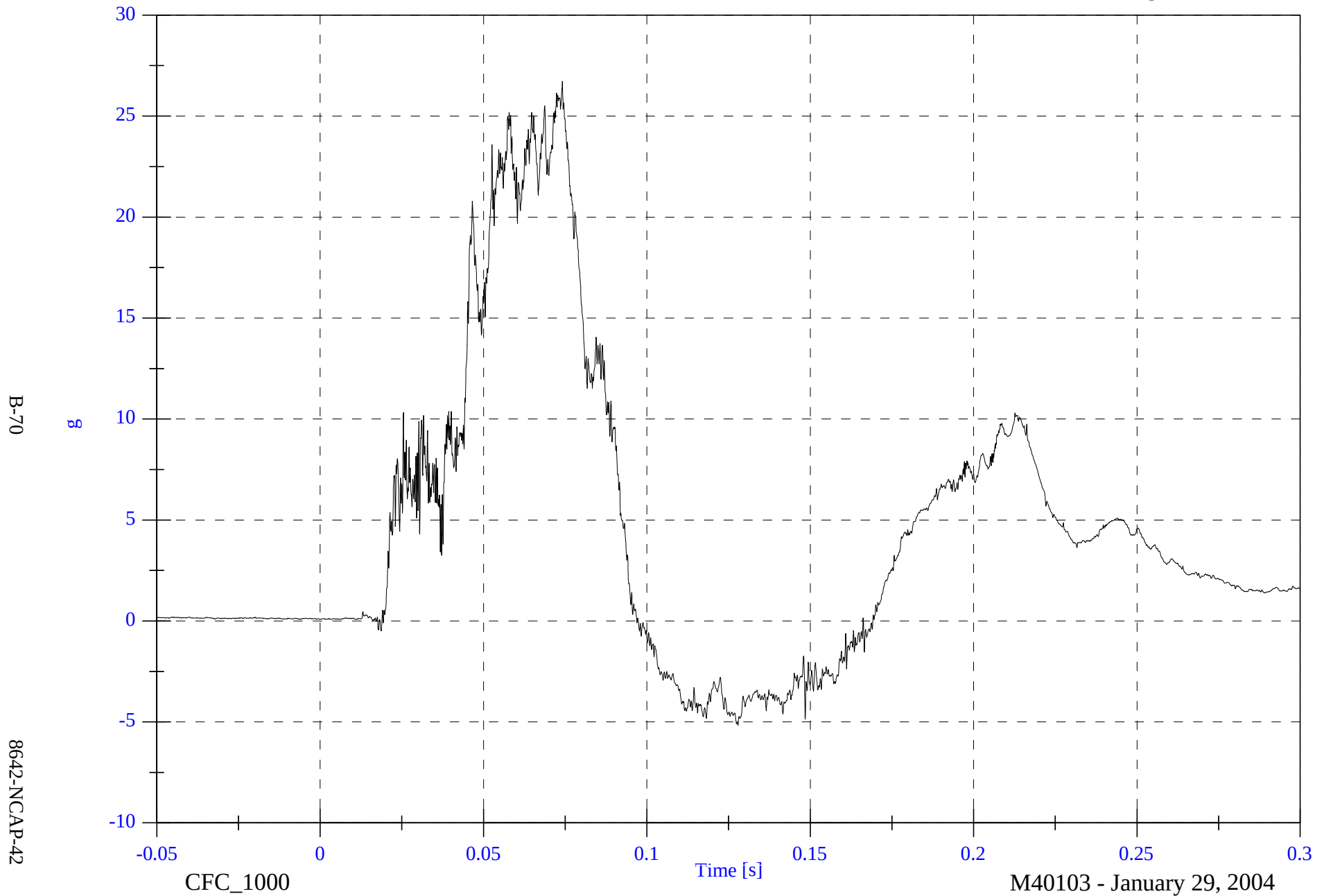


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Head CG z

Max: 26.7 [g] at 0.074 [s]

Min: -5.2 [g] at 0.128 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

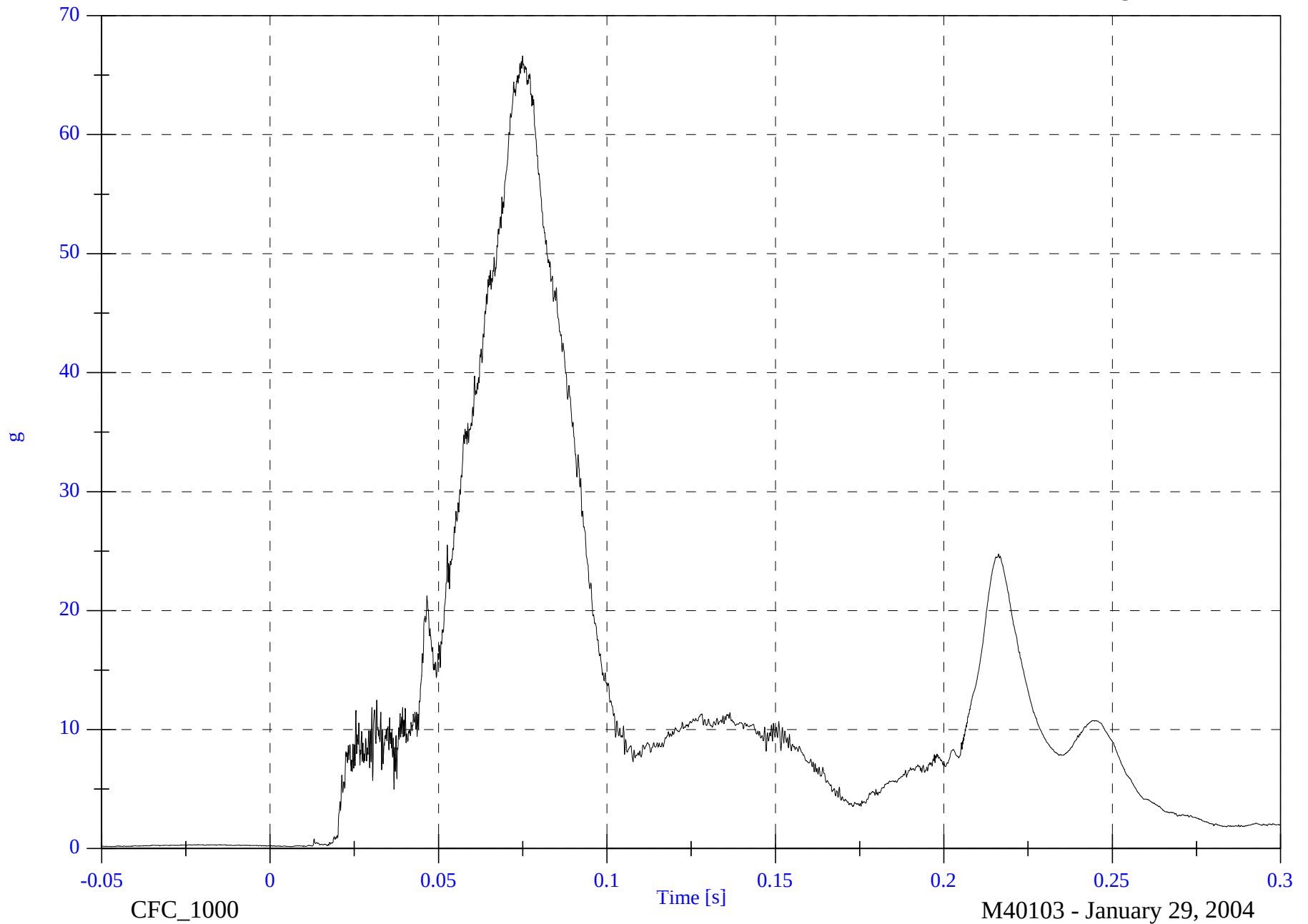
V1P2 Head CG Resultant

Max: 66.6 [g] at 0.075 [s]

Min: 0.2 [g] at 0.006 [s]

B-71

8642-NCAP-42



2004 NCAP Test 6 2004 Chevrolet Colorado

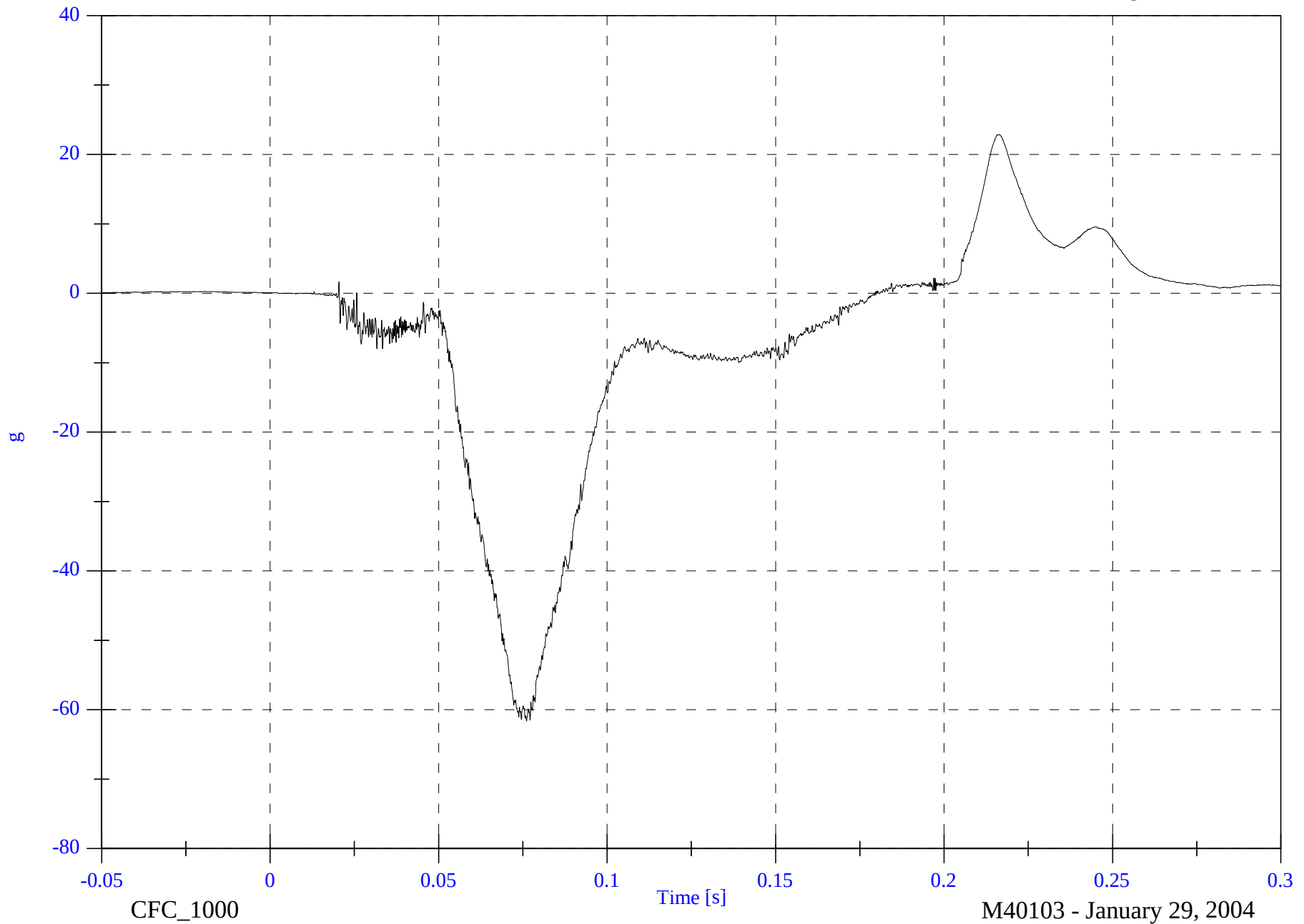
V1P2 Head CG Red x

Max: 22.9 [g] at 0.216 [s]

Min: -61.6 [g] at 0.076 [s]

B-72

8642-NCAP-42

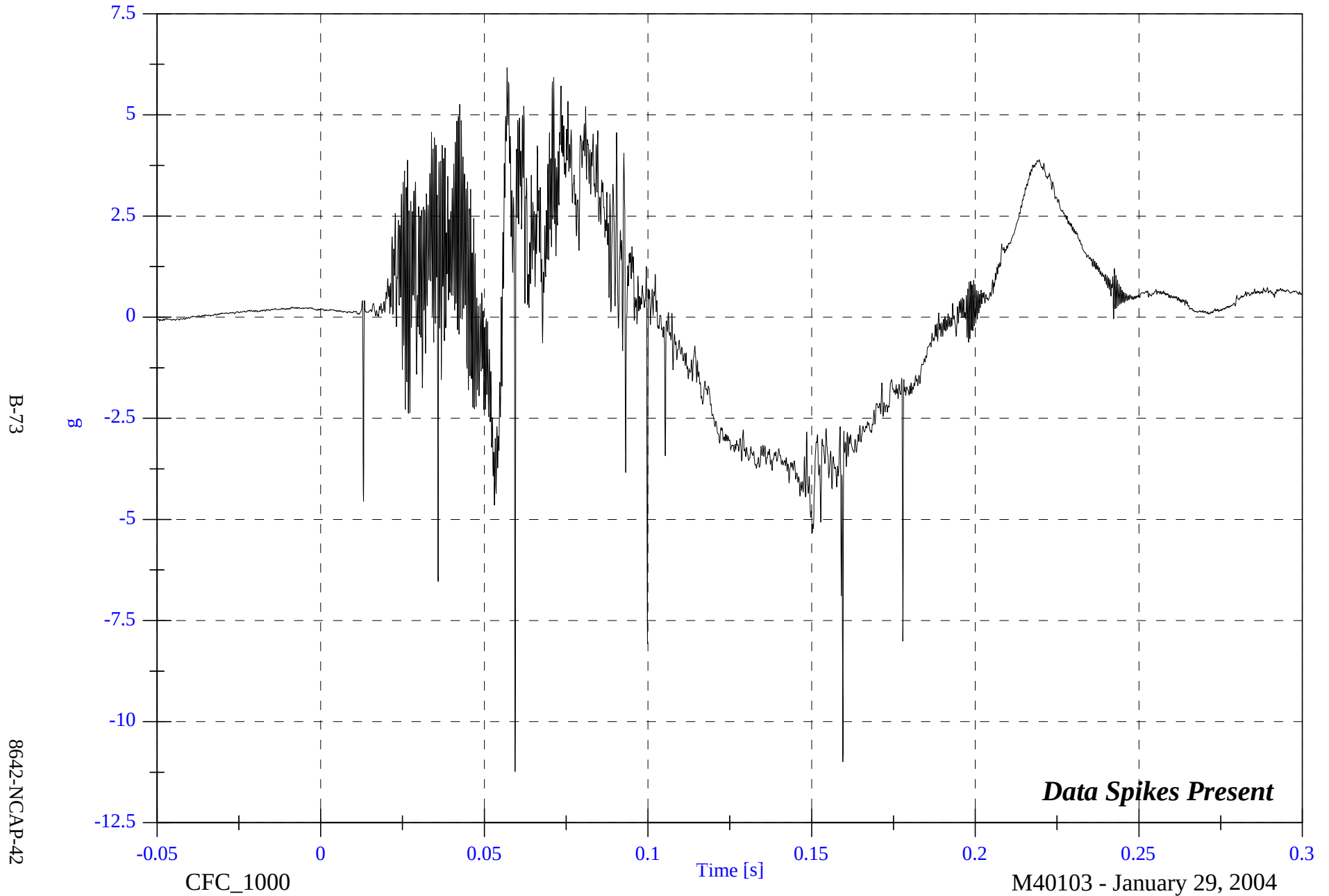


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Head CG Red y

Max: 6.2 [g] at 0.057 [s]

Min: -11.2 [g] at 0.059 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

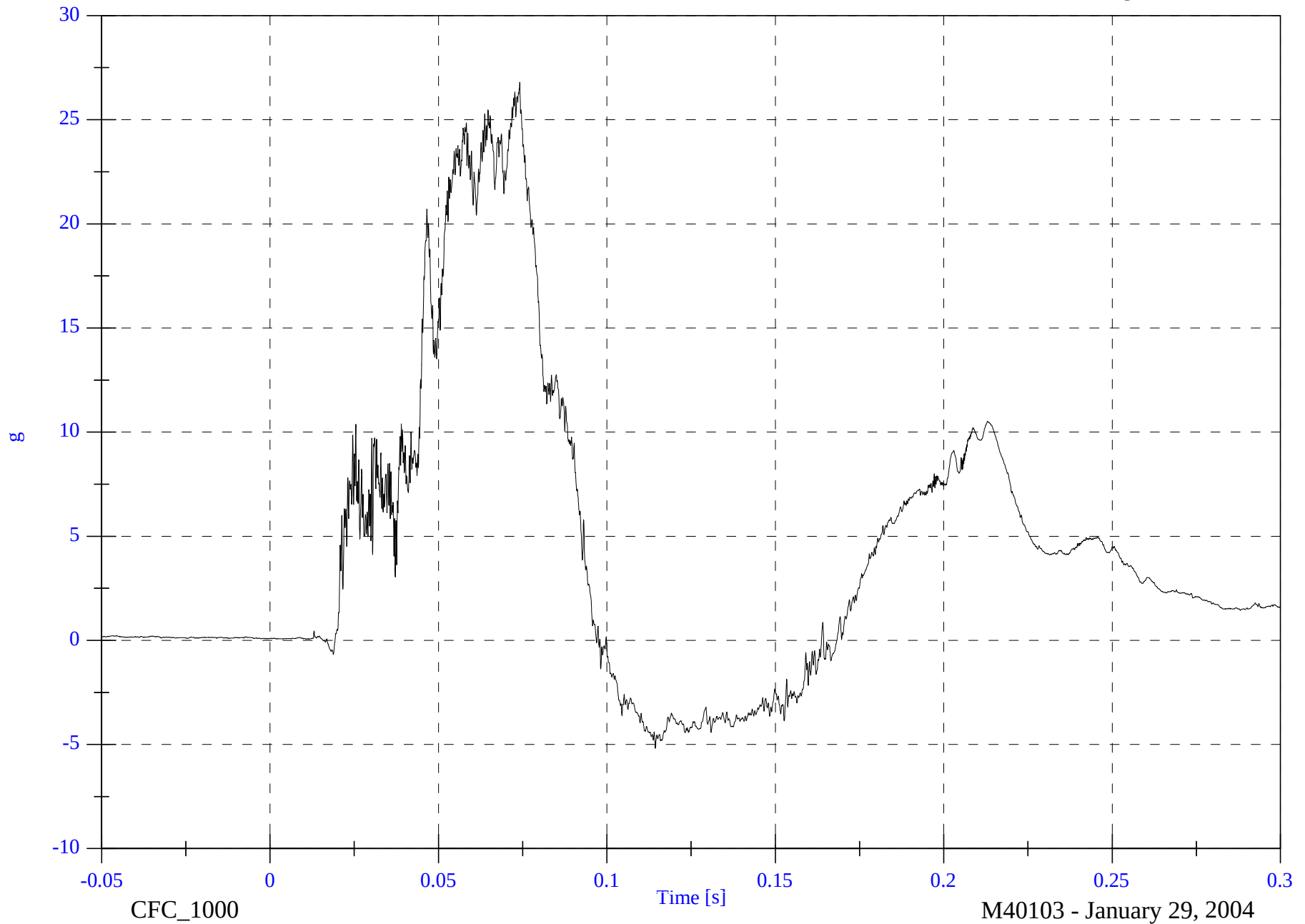
V1P2 Head CG Red z

Max: 26.8 [g] at 0.074 [s]

Min: -5.2 [g] at 0.114 [s]

B-74

8642-NCAP-42



2004 NCAP Test 6 2004 Chevrolet Colorado

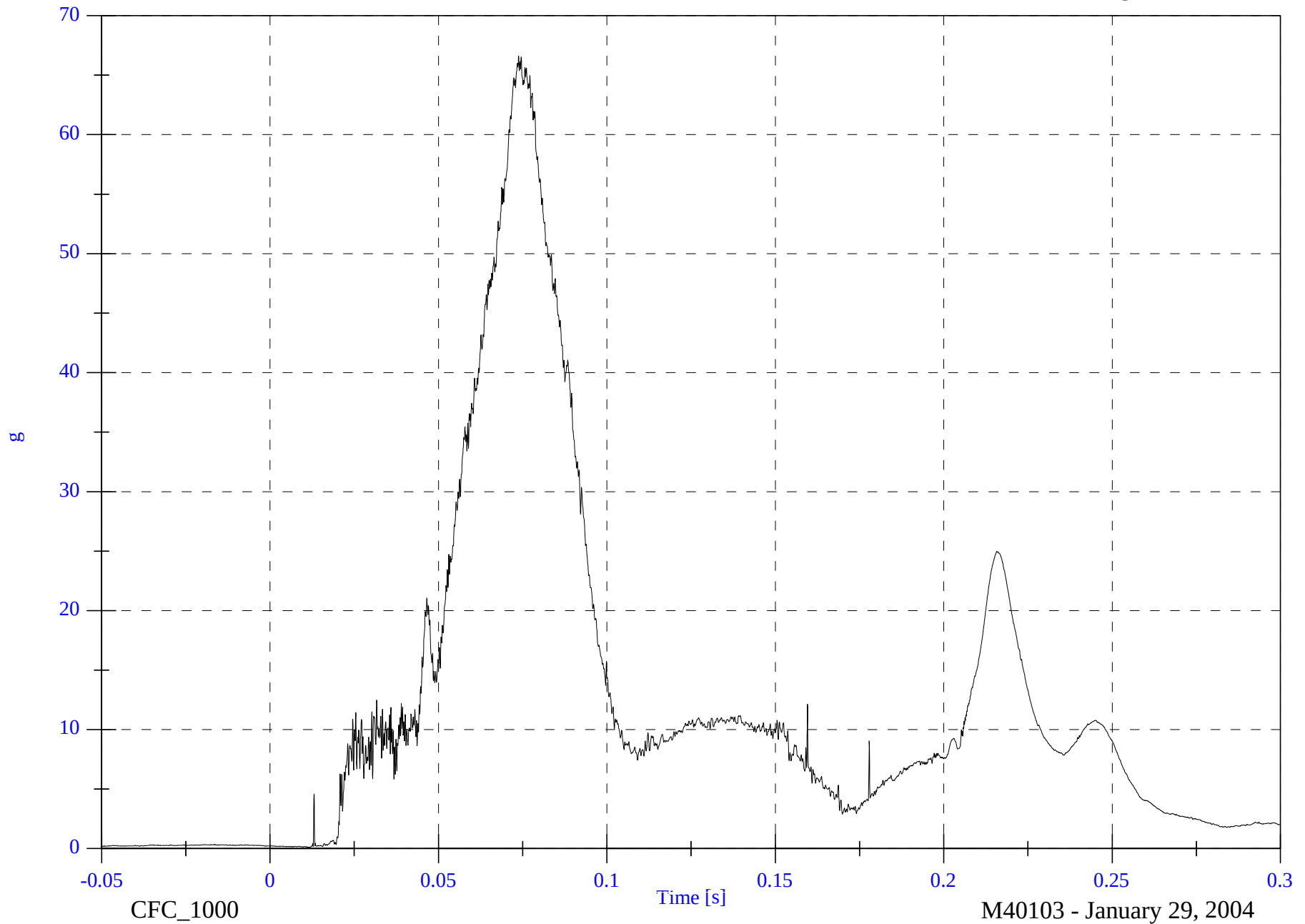
V1P2 Head CG Red Resultant

Max: 66.6 [g] at 0.074 [s]

Min: 0.1 [g] at 0.011 [s]

B-75

8642-NCAP-42

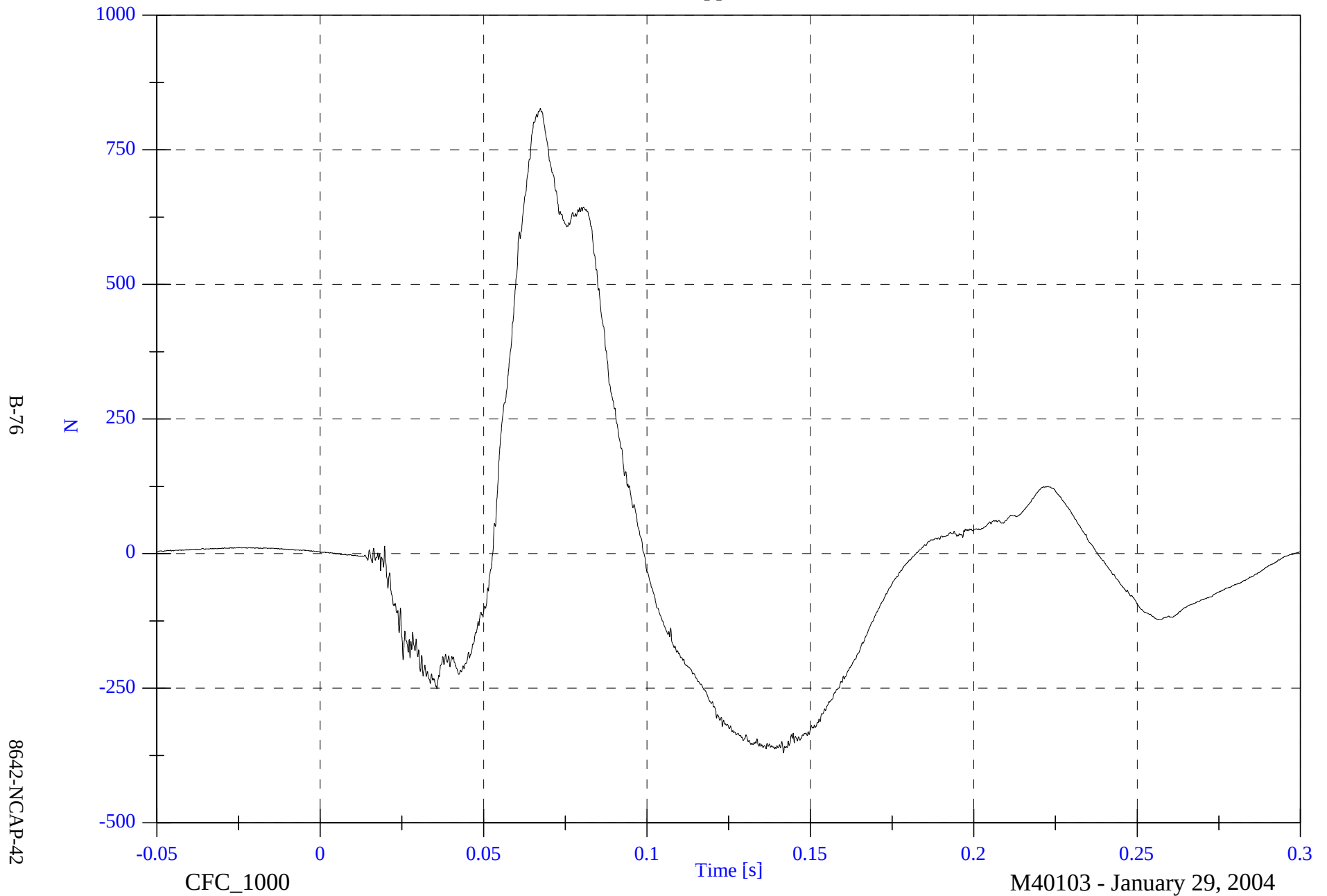


2004 NCAP Test 6 2004 Chevrolet Colorado

Max: 827.0 [N] at 0.067 [s]

Min: -370.1 [N] at 0.142 [s]

V1P2 Upper Neck Fx

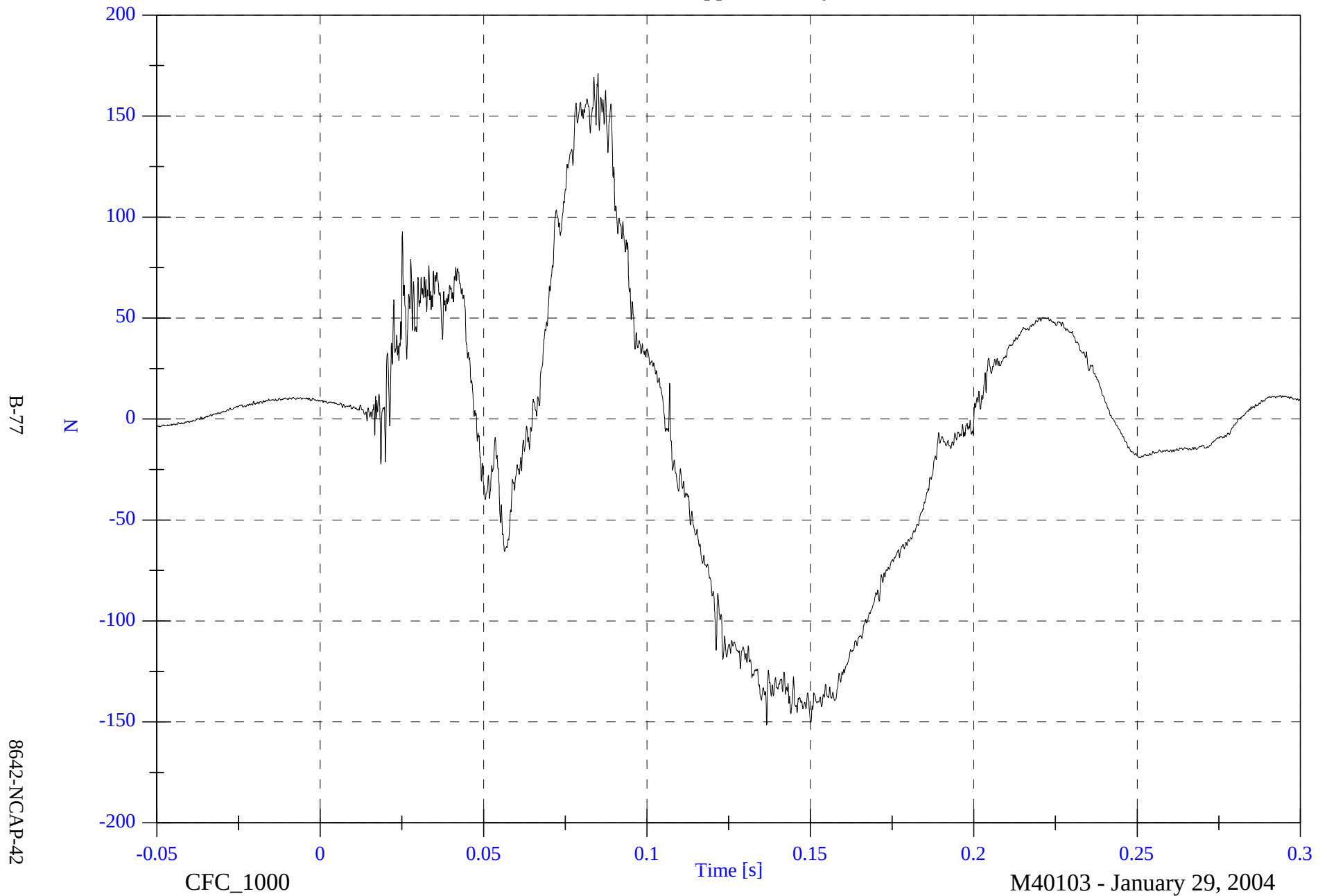


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Upper Neck Fy

Max: 171.1 [N] at 0.085 [s]

Min: -151.5 [N] at 0.137 [s]

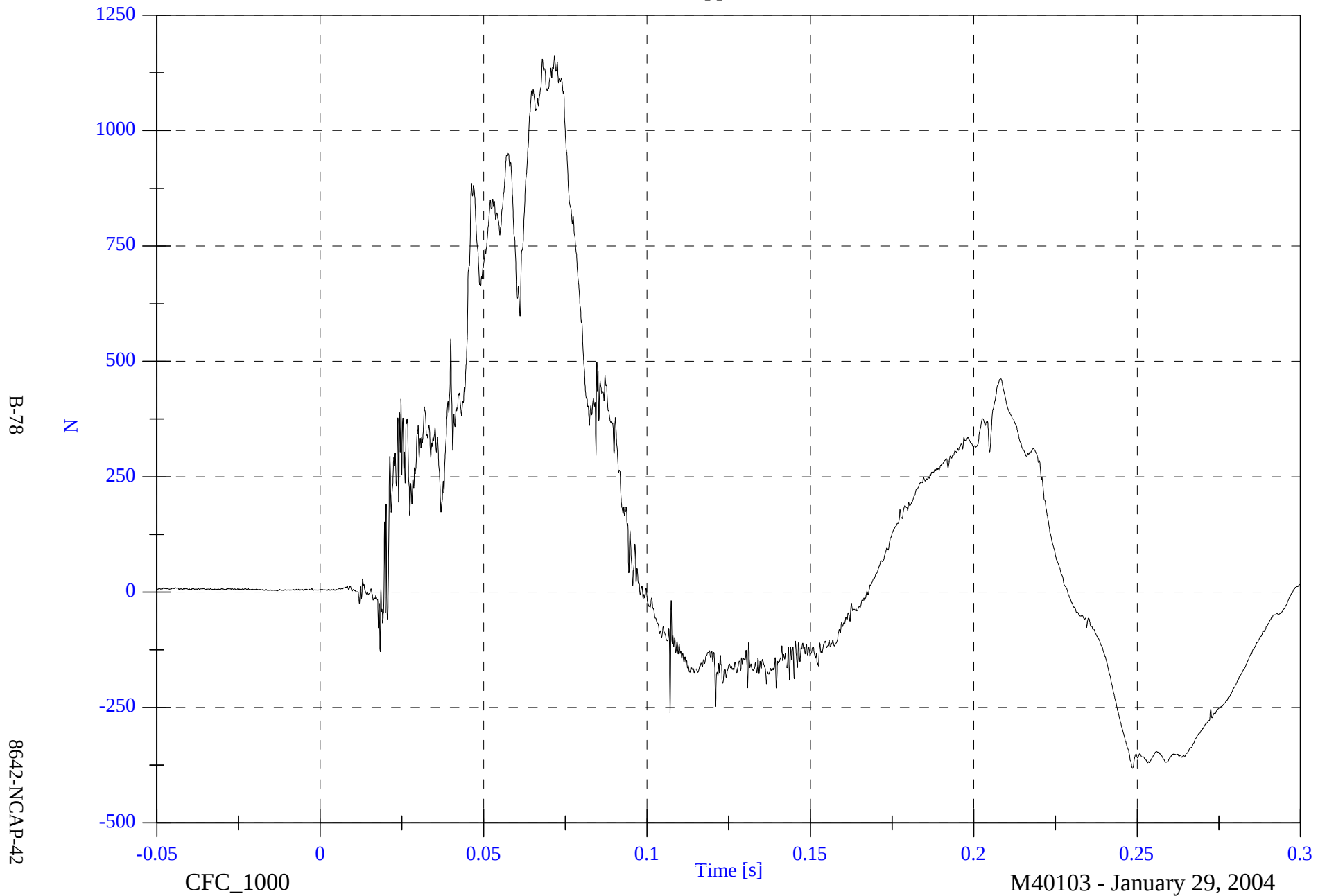


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Upper Neck Fz

Max: 1161.6 [N] at 0.072 [s]

Min: -382.1 [N] at 0.249 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

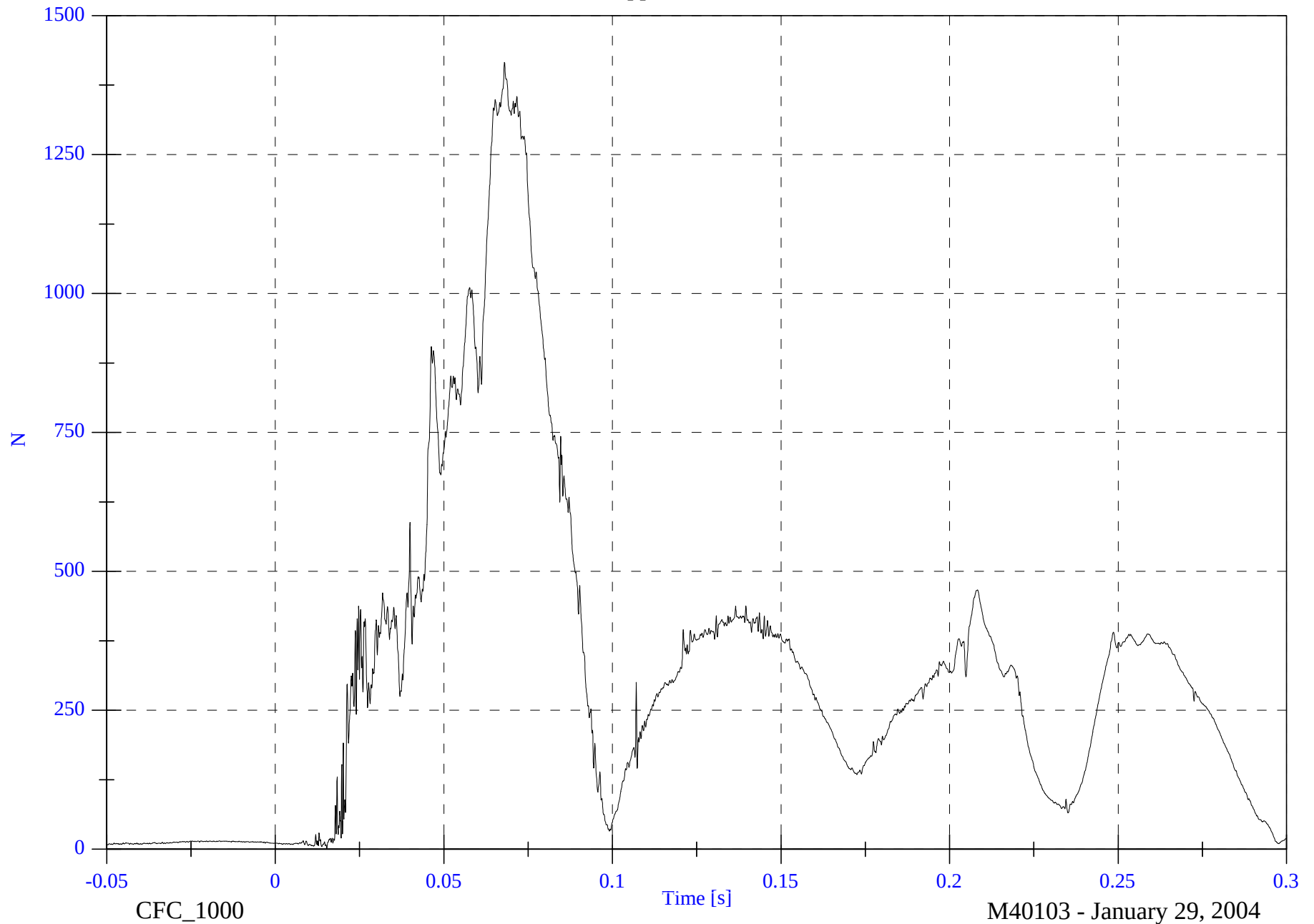
V1P2 Upper Neck F Resultant

Max: 1416.0 [N] at 0.068 [s]

Min: 1.5 [N] at 0.015 [s]

B-79

8642-NCAP-42



2004 NCAP Test 6 2004 Chevrolet Colorado

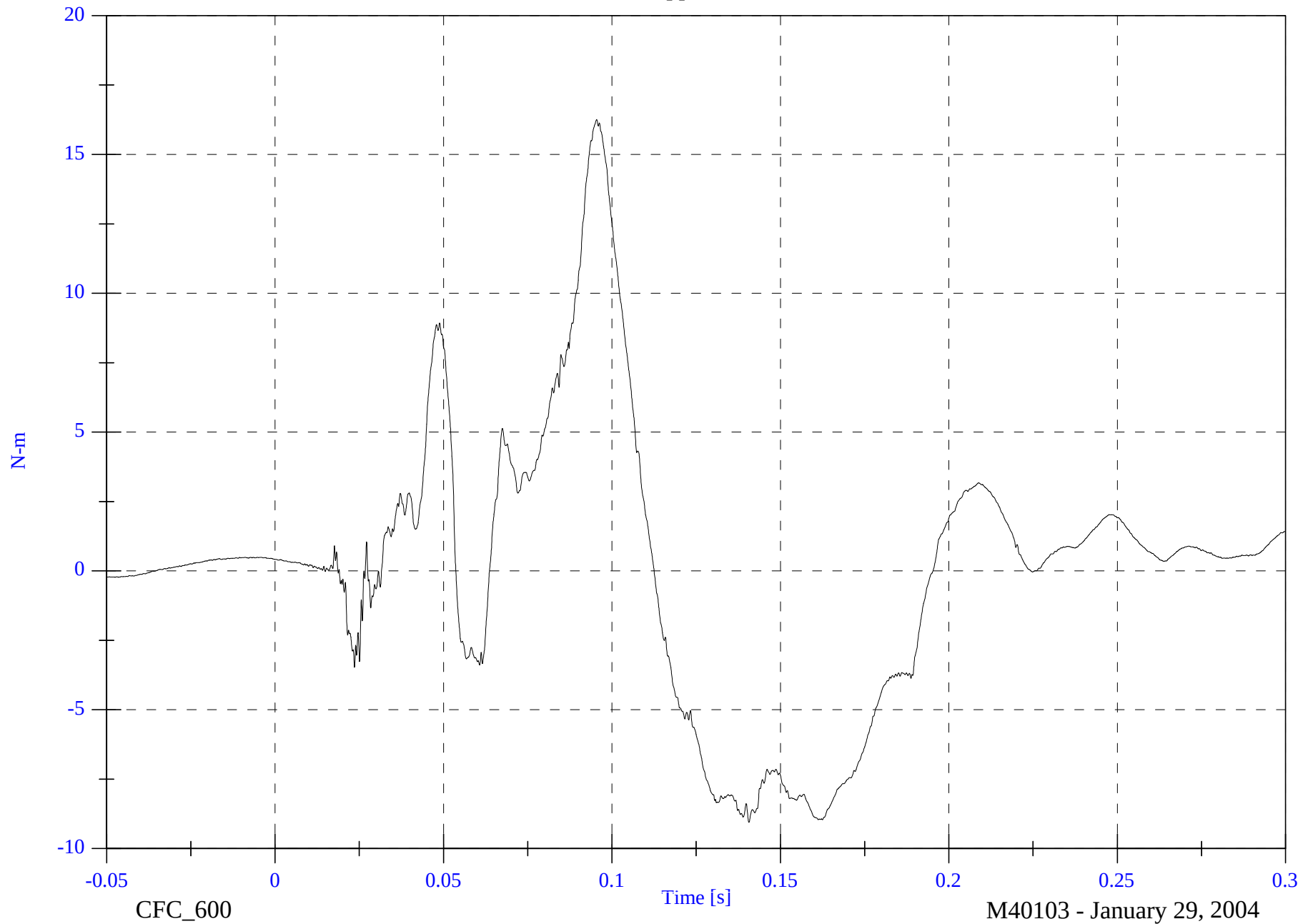
V1P2 Upper Neck Mx

Max: 16.3 [N-m] at 0.095 [s]

Min: -9.1 [N-m] at 0.141 [s]

B-80

8642-NCAP-42



2004 NCAP Test 6 2004 Chevrolet Colorado

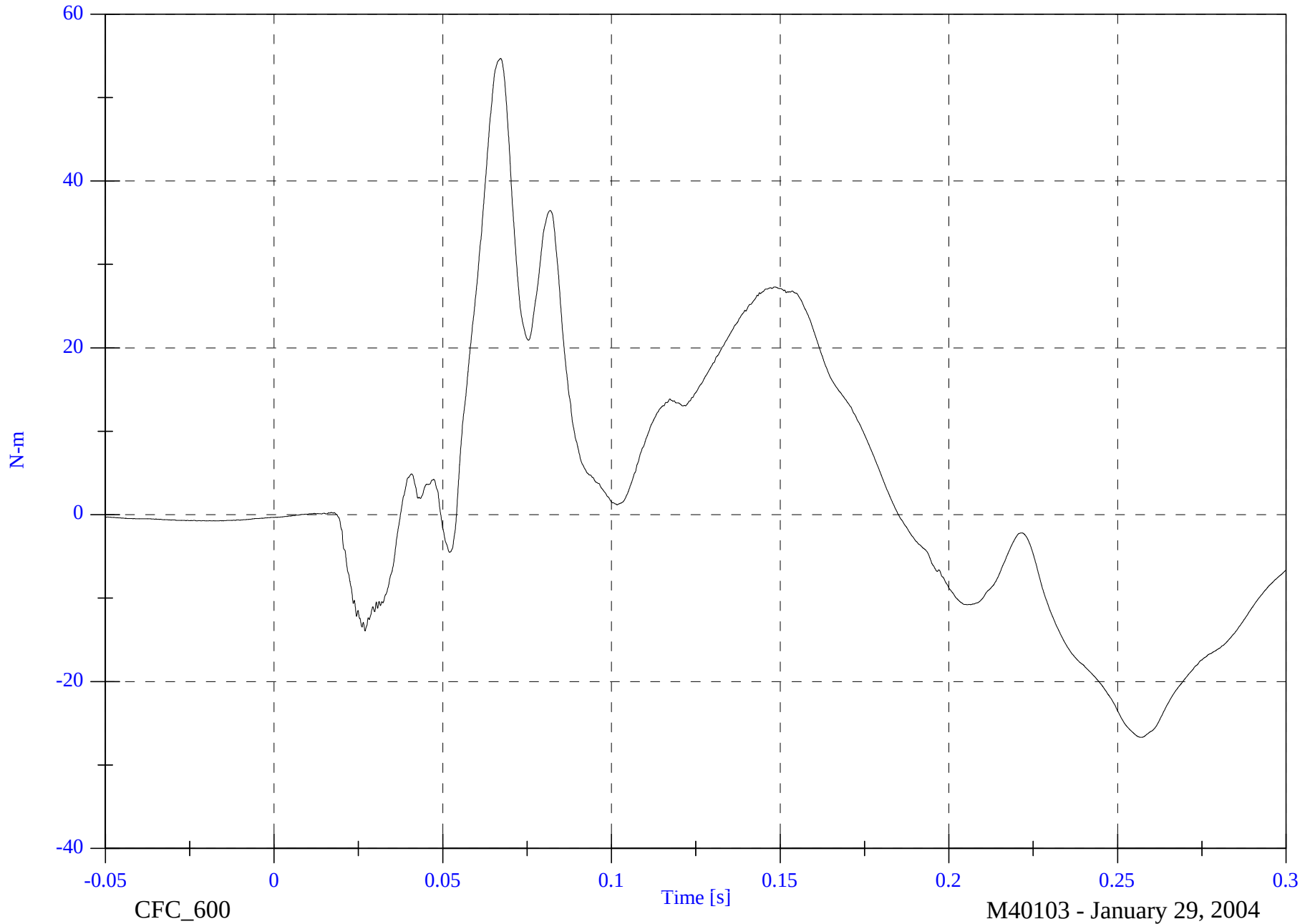
V1P2 Upper Neck My

Max: 54.7 [N-m] at 0.067 [s]

Min: -26.7 [N-m] at 0.257 [s]

B-81

8642-NCAP-42

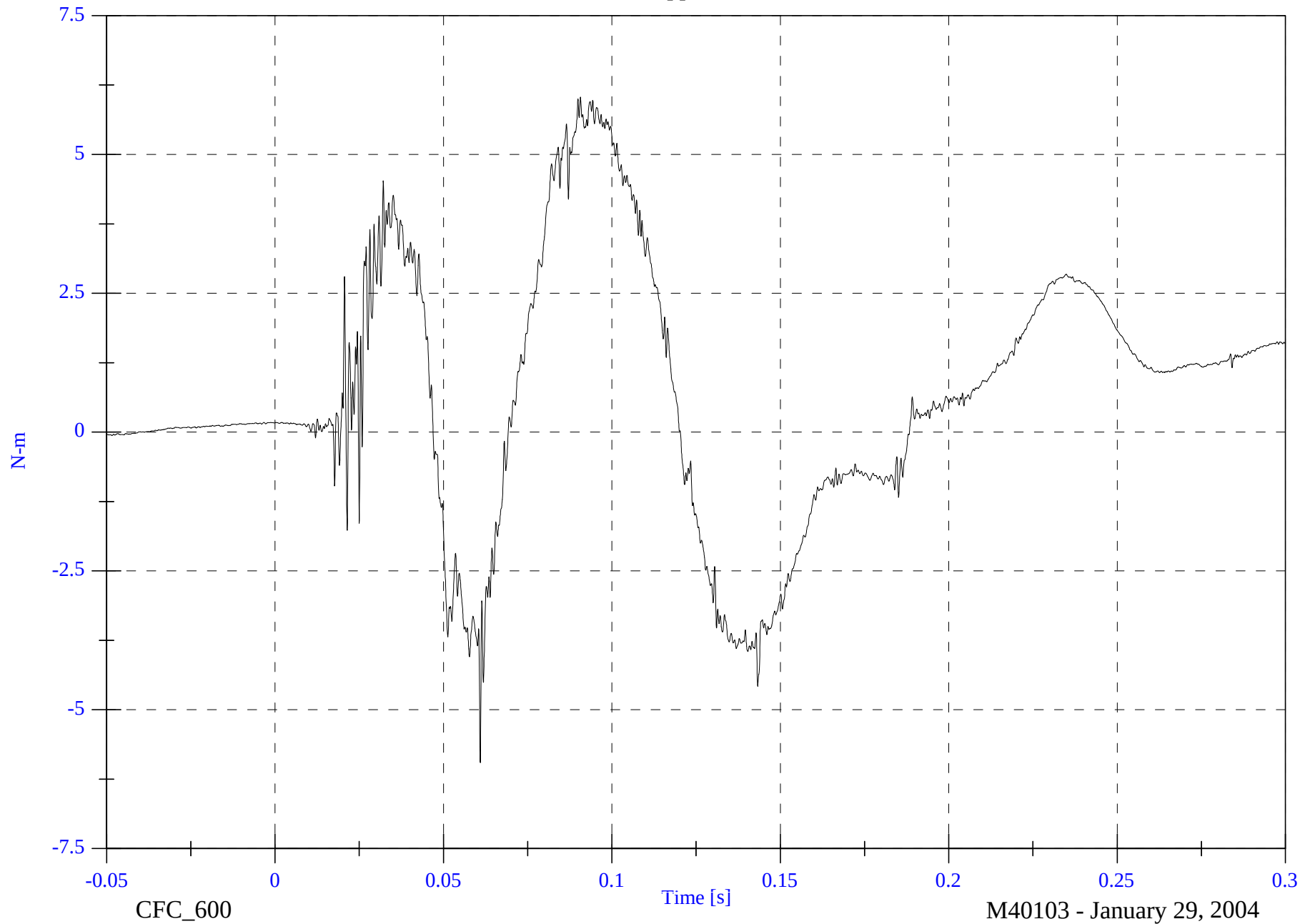


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Upper Neck Mz

Max: 6.0 [N-m] at 0.091 [s]

Min: -6.0 [N-m] at 0.061 [s]



B-82

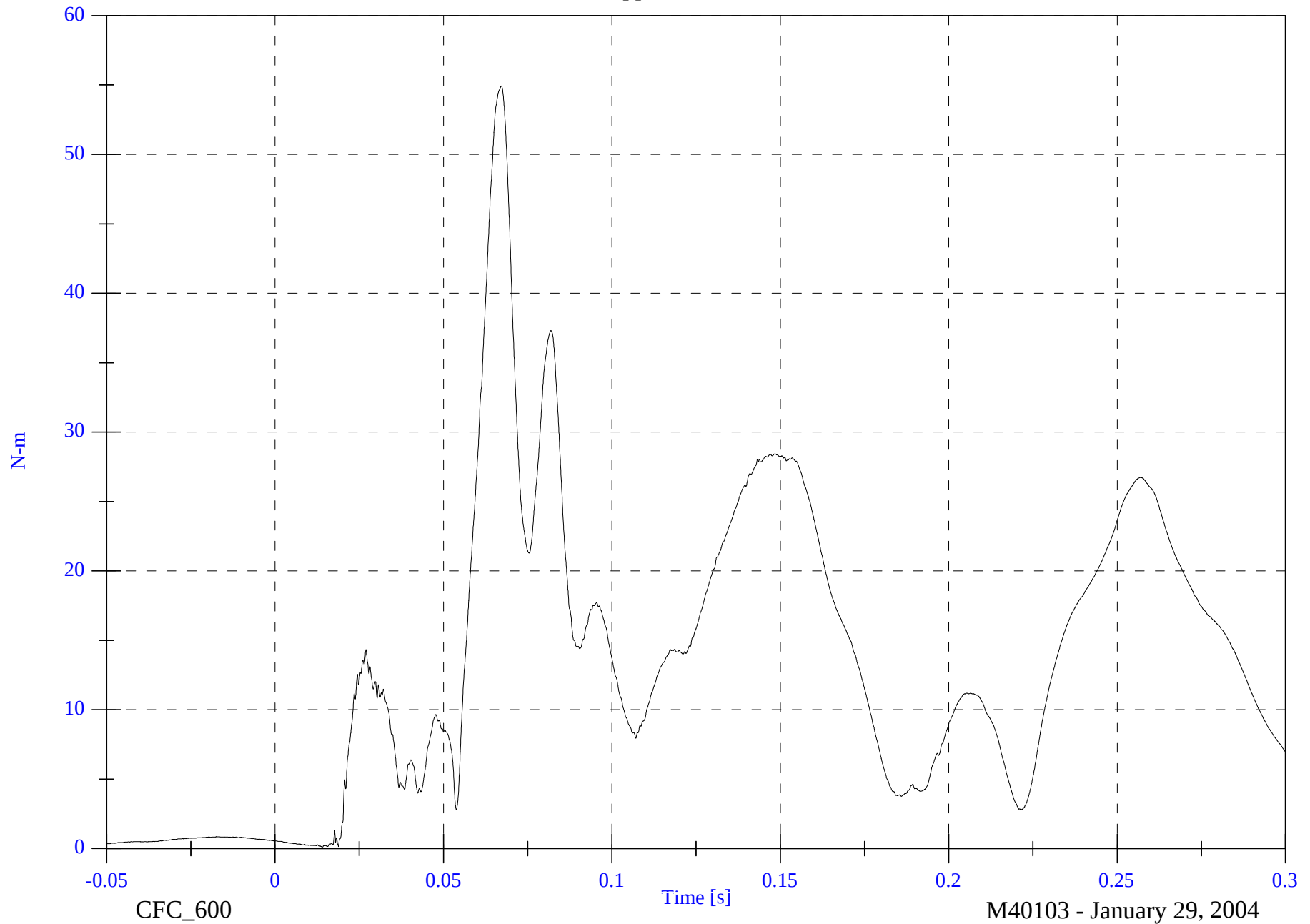
8642-NCAP-42

2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Upper Neck M Resultant

Max: 54.9 [N-m] at 0.067 [s]

Min: 0.1 [N-m] at 0.014 [s]



B-83

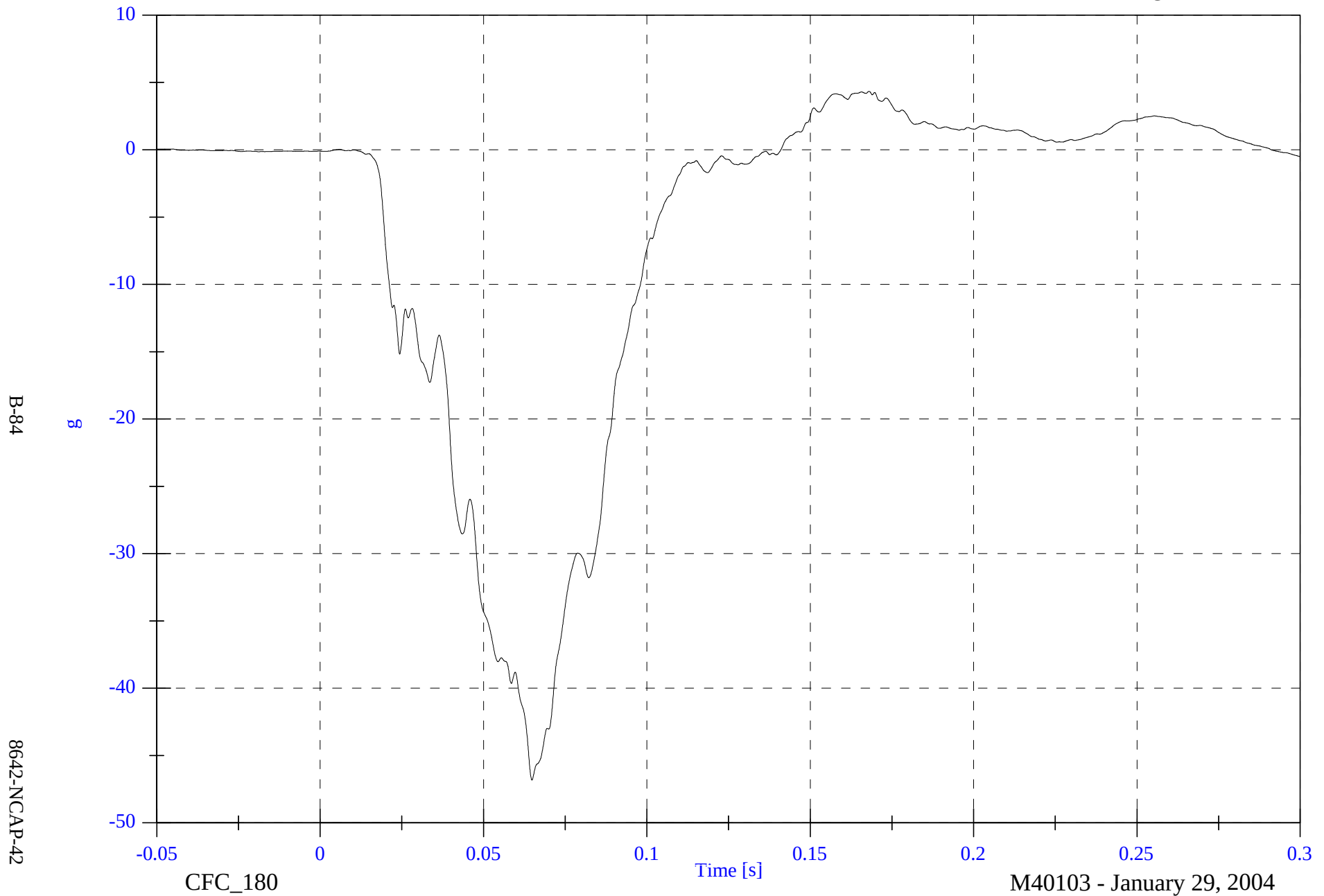
8642-NCAP-42

2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Chest x

Max: 4.3 [g] at 0.168 [s]

Min: -46.8 [g] at 0.065 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

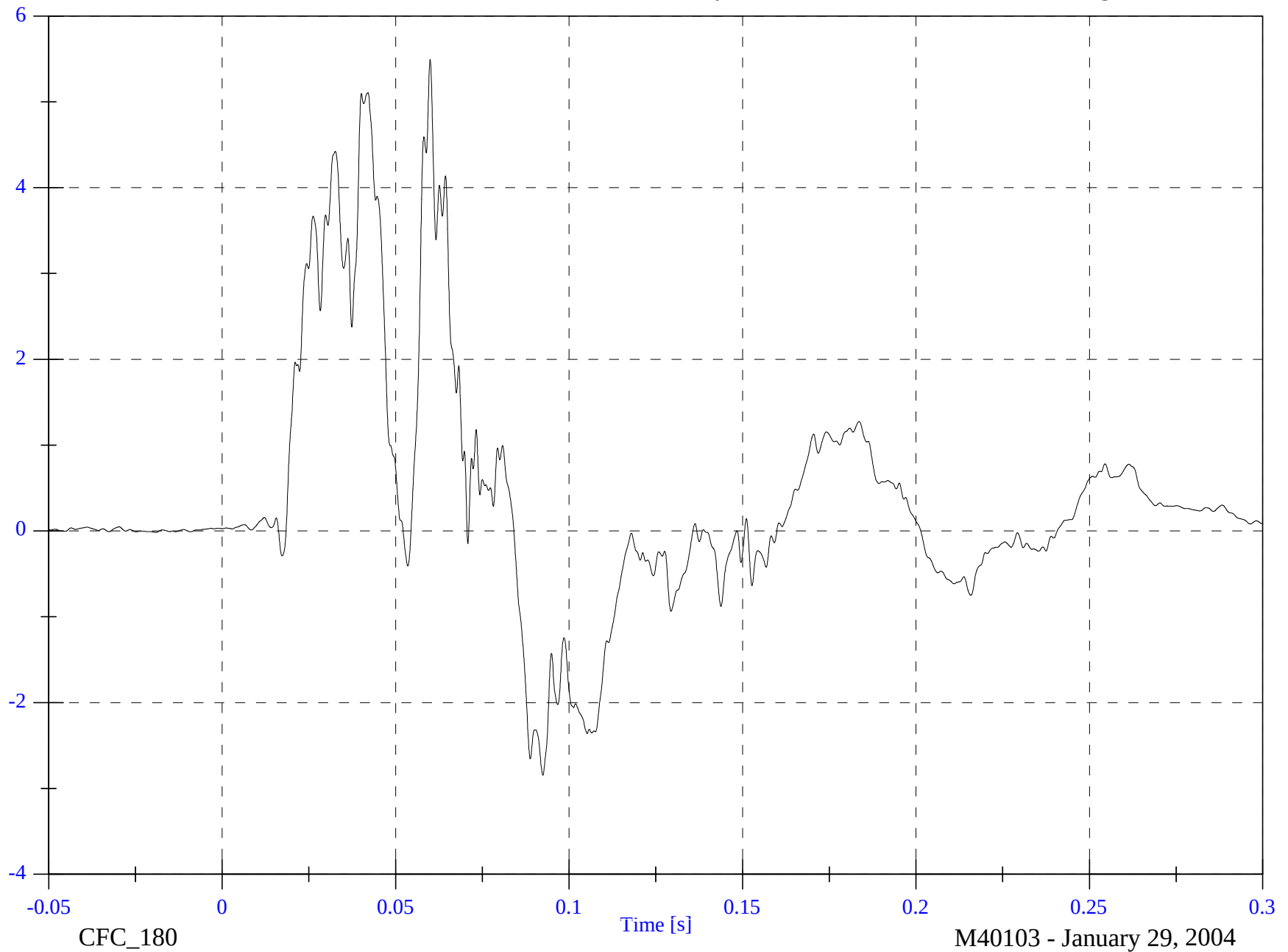
V1P2 Chest y

Max: 5.5 [g] at 0.060 [s]

Min: -2.8 [g] at 0.093 [s]

B-85

8642-NCAP-42

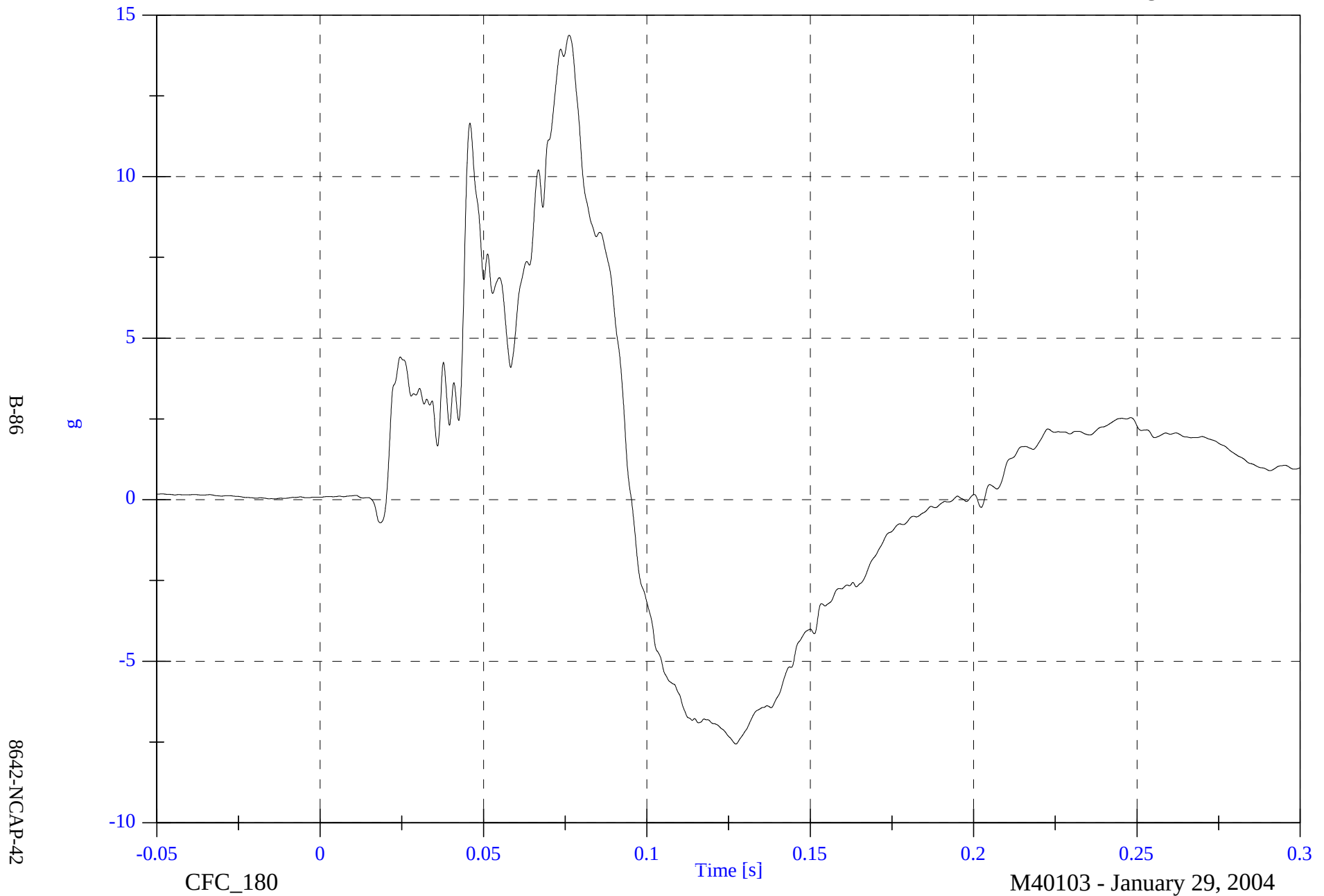


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Chest z

Max: 14.4 [g] at 0.076 [s]

Min: -7.6 [g] at 0.127 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

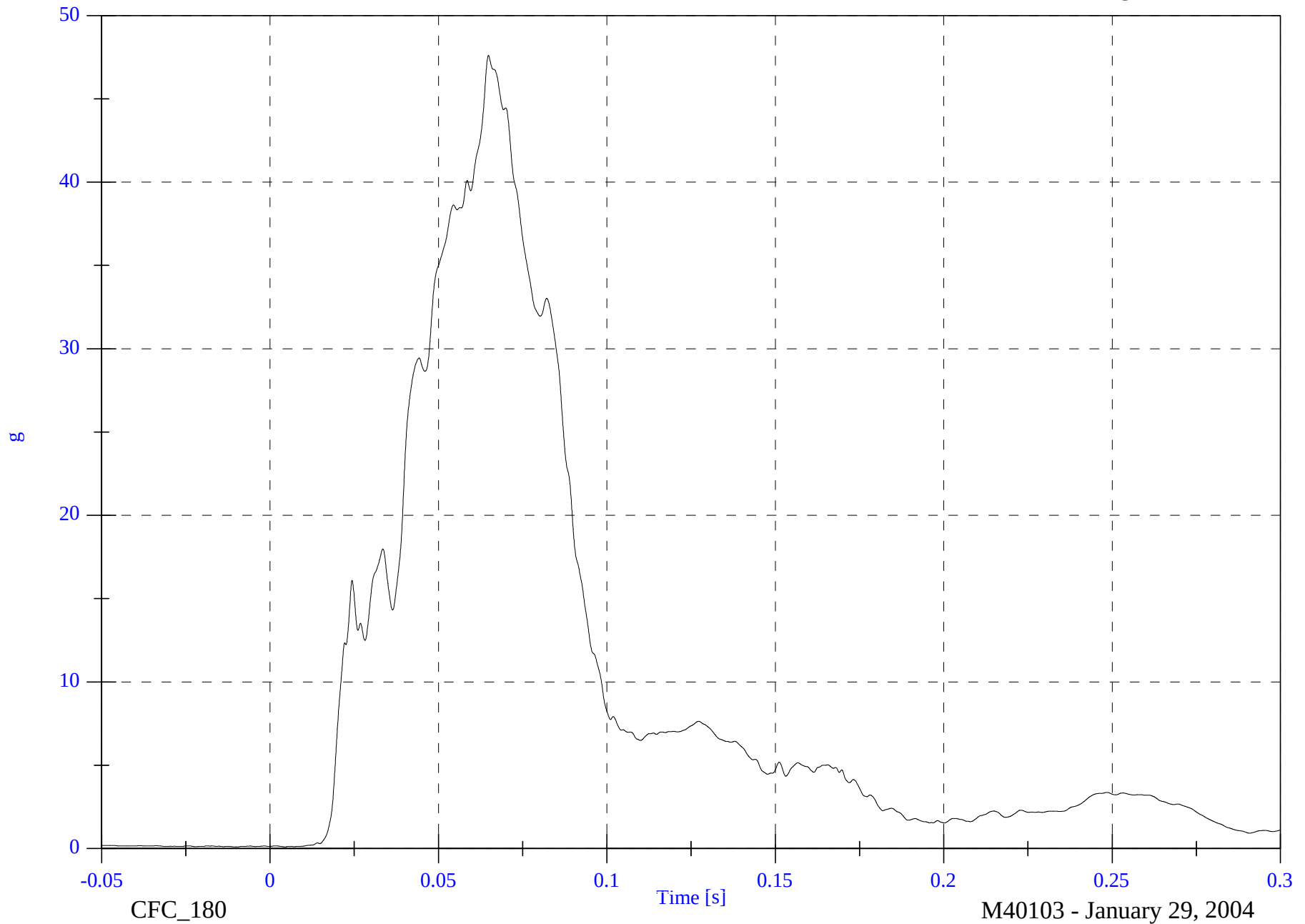
V1P2 Chest Resultant

Max: 47.6 [g] at 0.065 [s]

Min: 0.1 [g] at 0.004 [s]

B-87

8642-NCAP-42

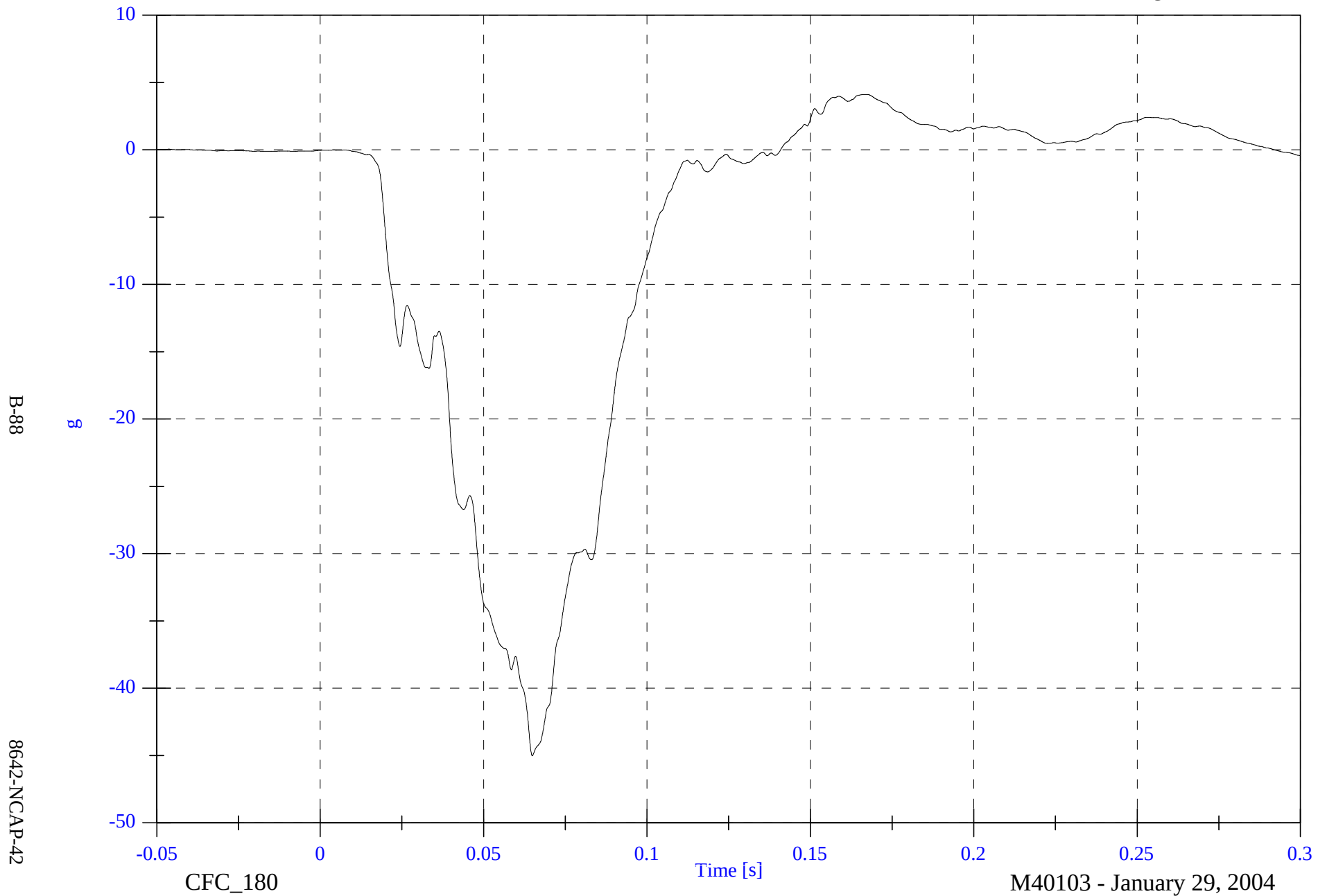


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Chest Red x

Max: 4.1 [g] at 0.167 [s]

Min: -45.0 [g] at 0.065 [s]

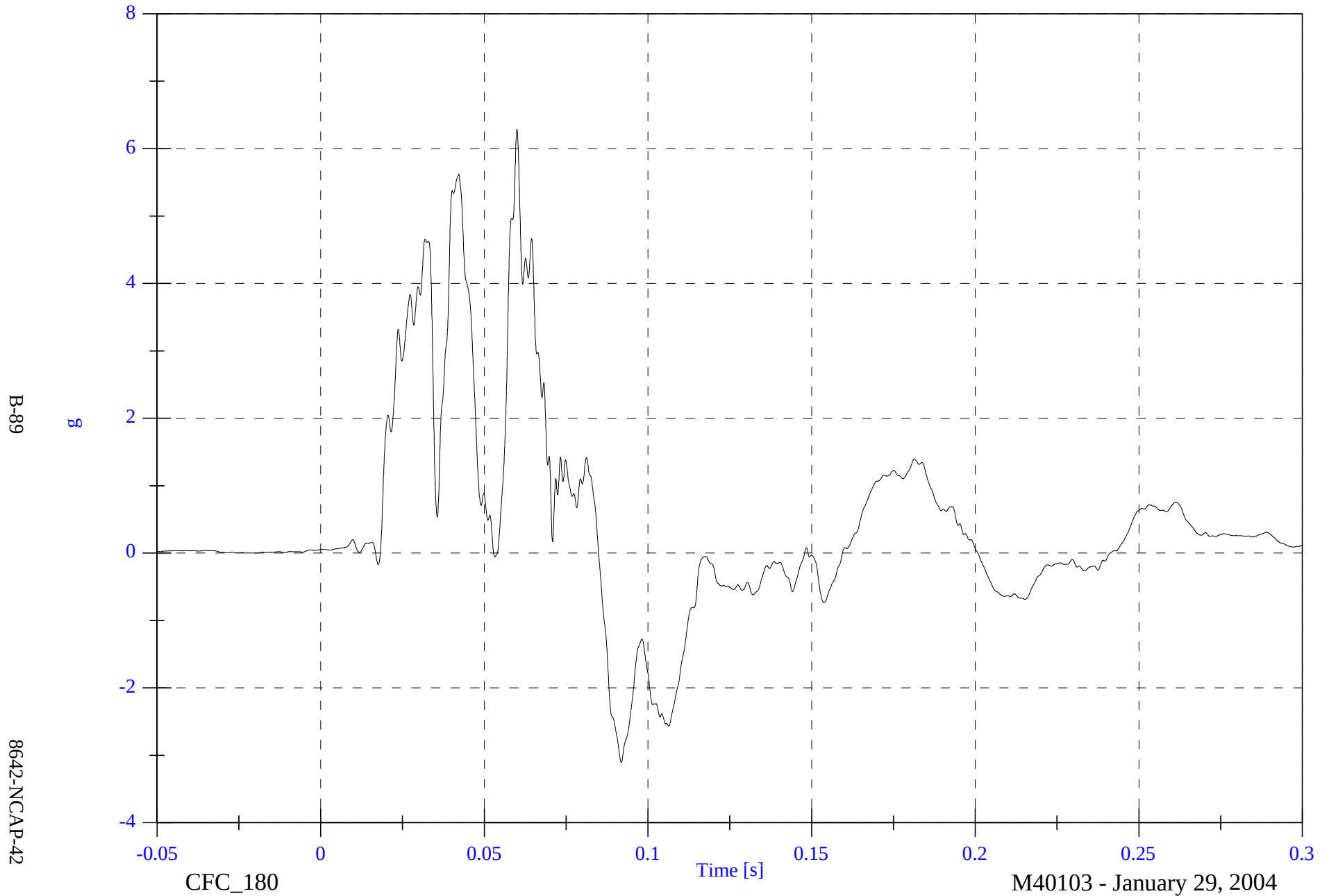


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Chest Red y

Max: 6.3 [g] at 0.060 [s]

Min: -3.1 [g] at 0.092 [s]

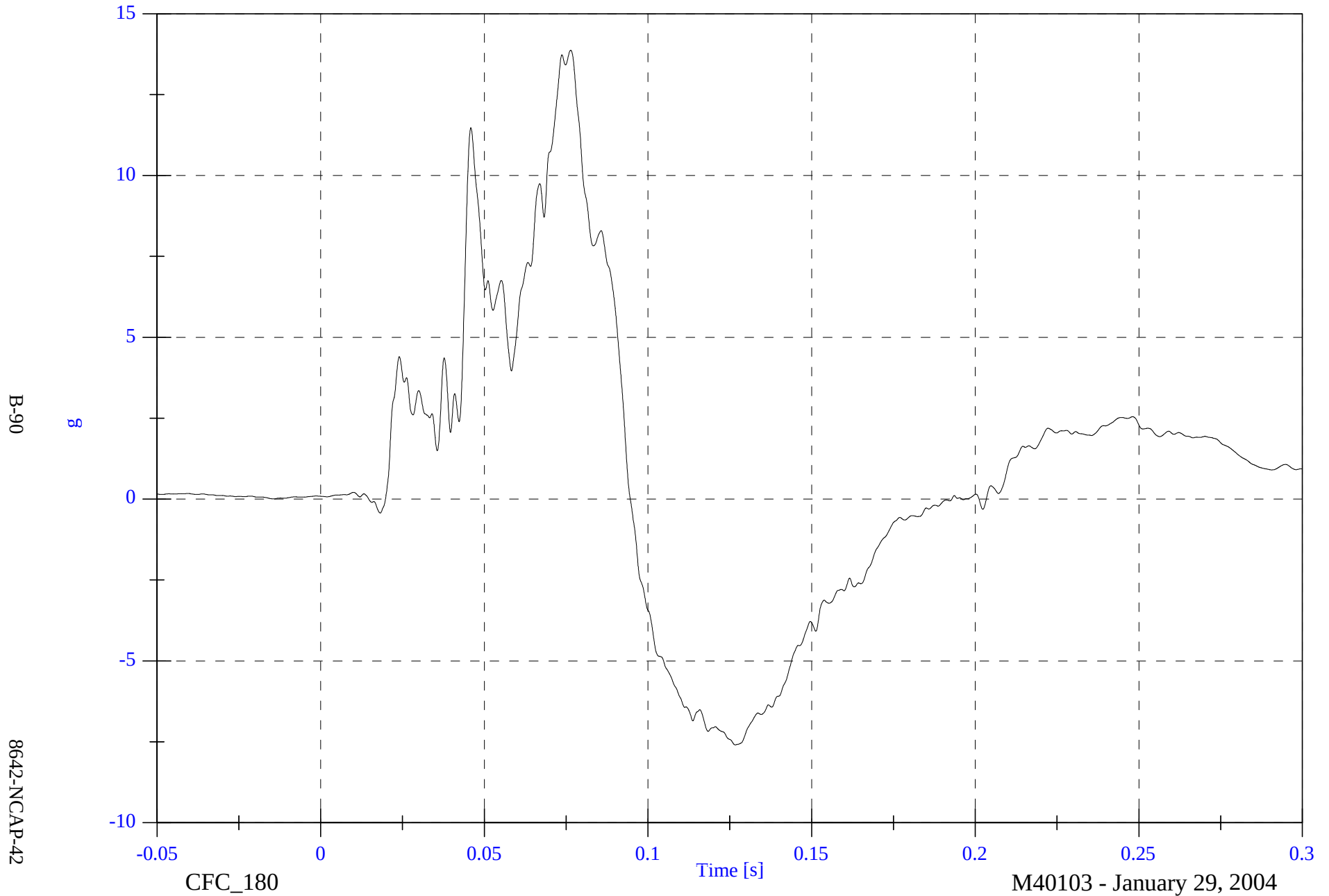


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Chest Red z

Max: 13.9 [g] at 0.076 [s]

Min: -7.6 [g] at 0.127 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

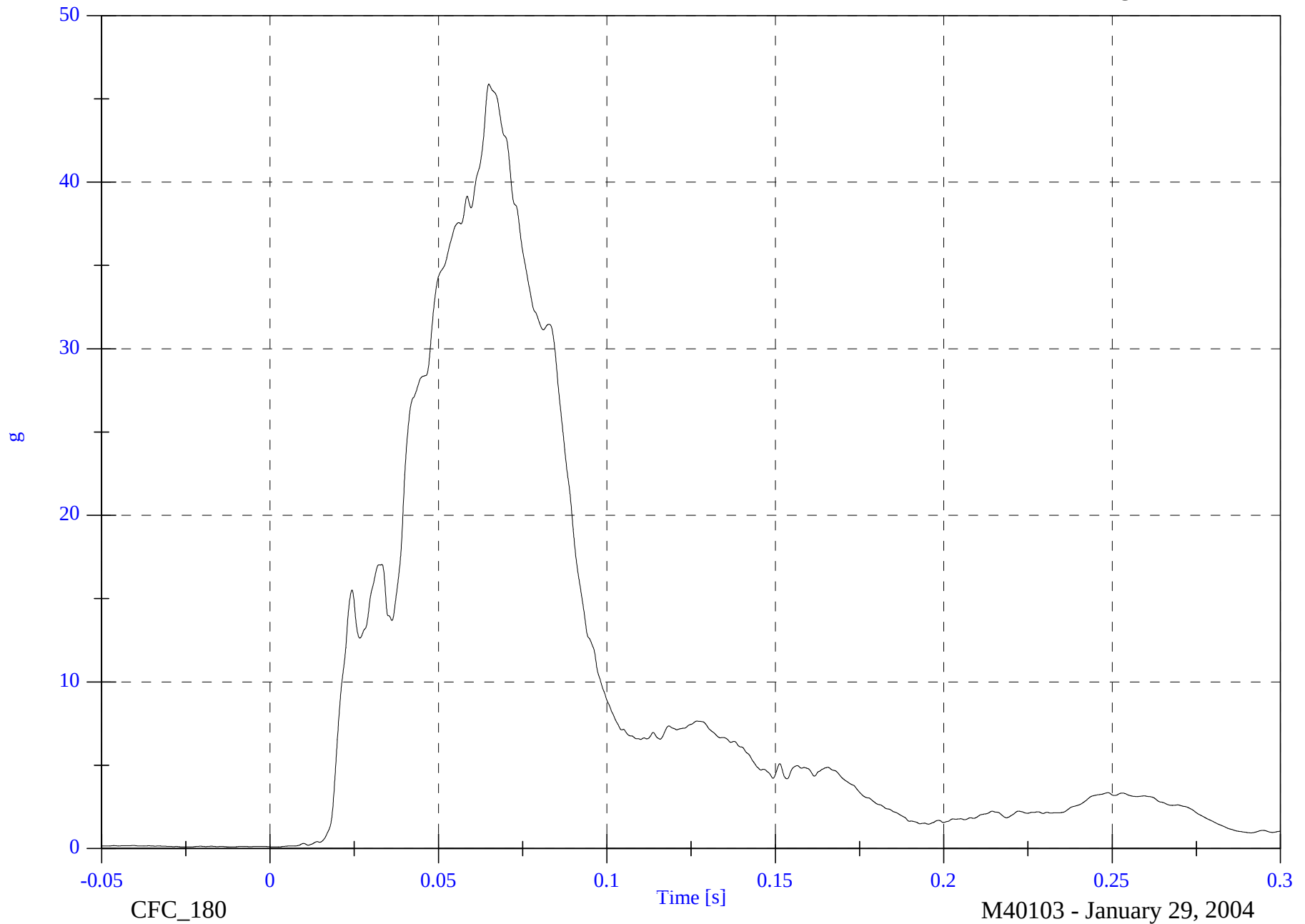
V1P2 Chest Red Resultant

Max: 45.9 [g] at 0.065 [s]

Min: 0.1 [g] at 0.002 [s]

B-91

8642-NCAP-42

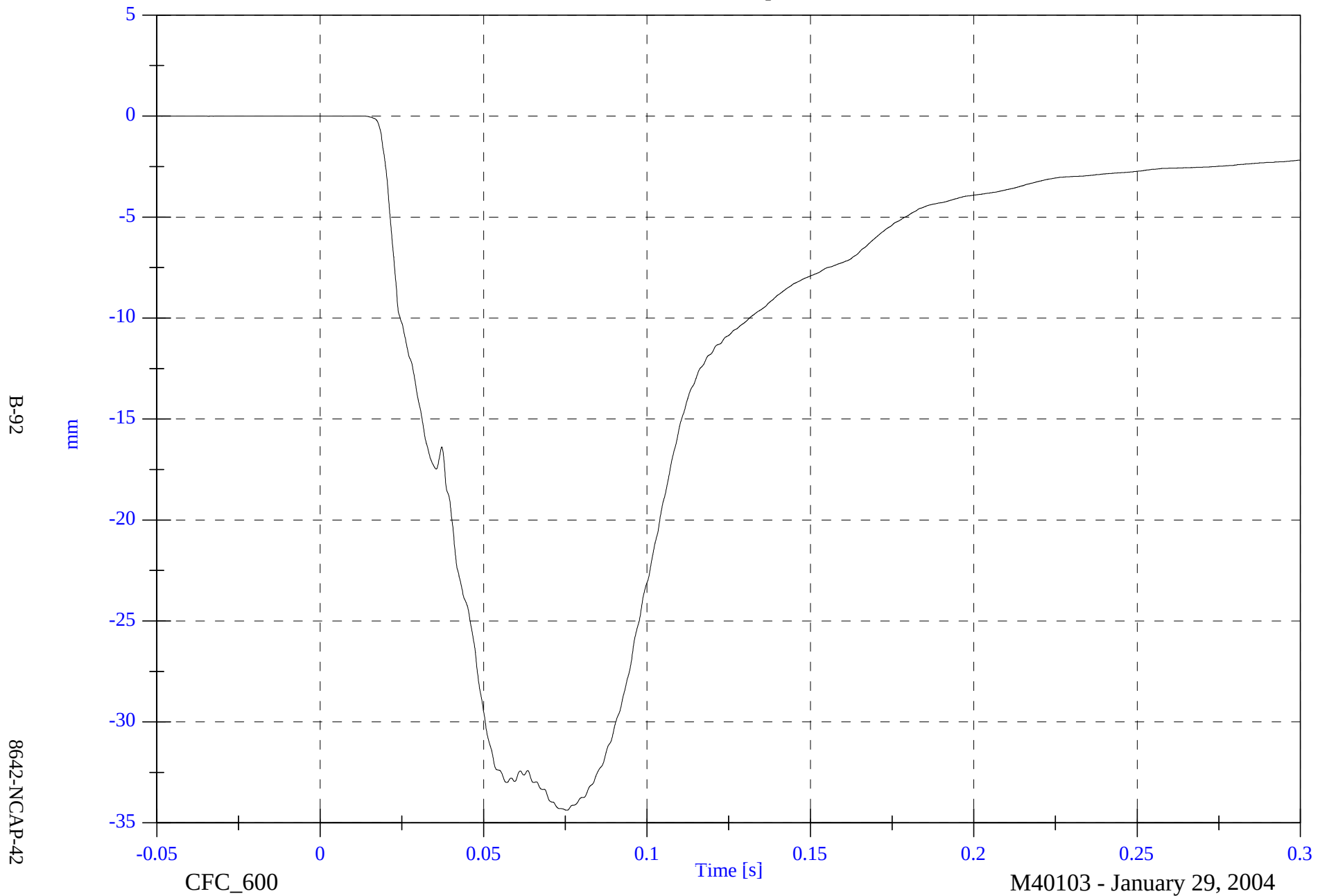


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Chest Compression x

Max: 0.0 [mm] at -0.010 [s]

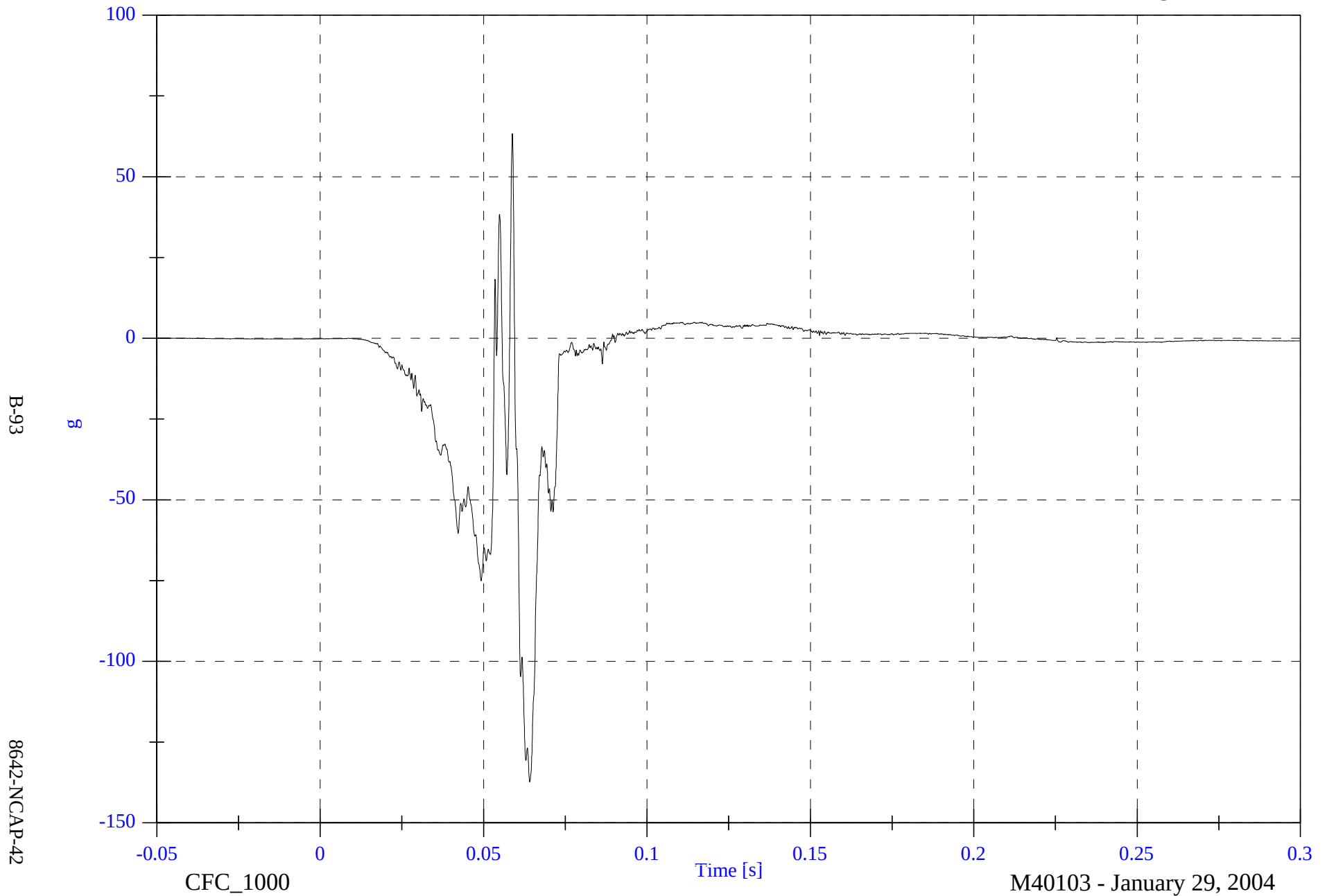
Min: -34.4 [mm] at 0.075 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Pelvic x

Max: 63.4 [g] at 0.059 [s]
Min: -137.3 [g] at 0.064 [s]

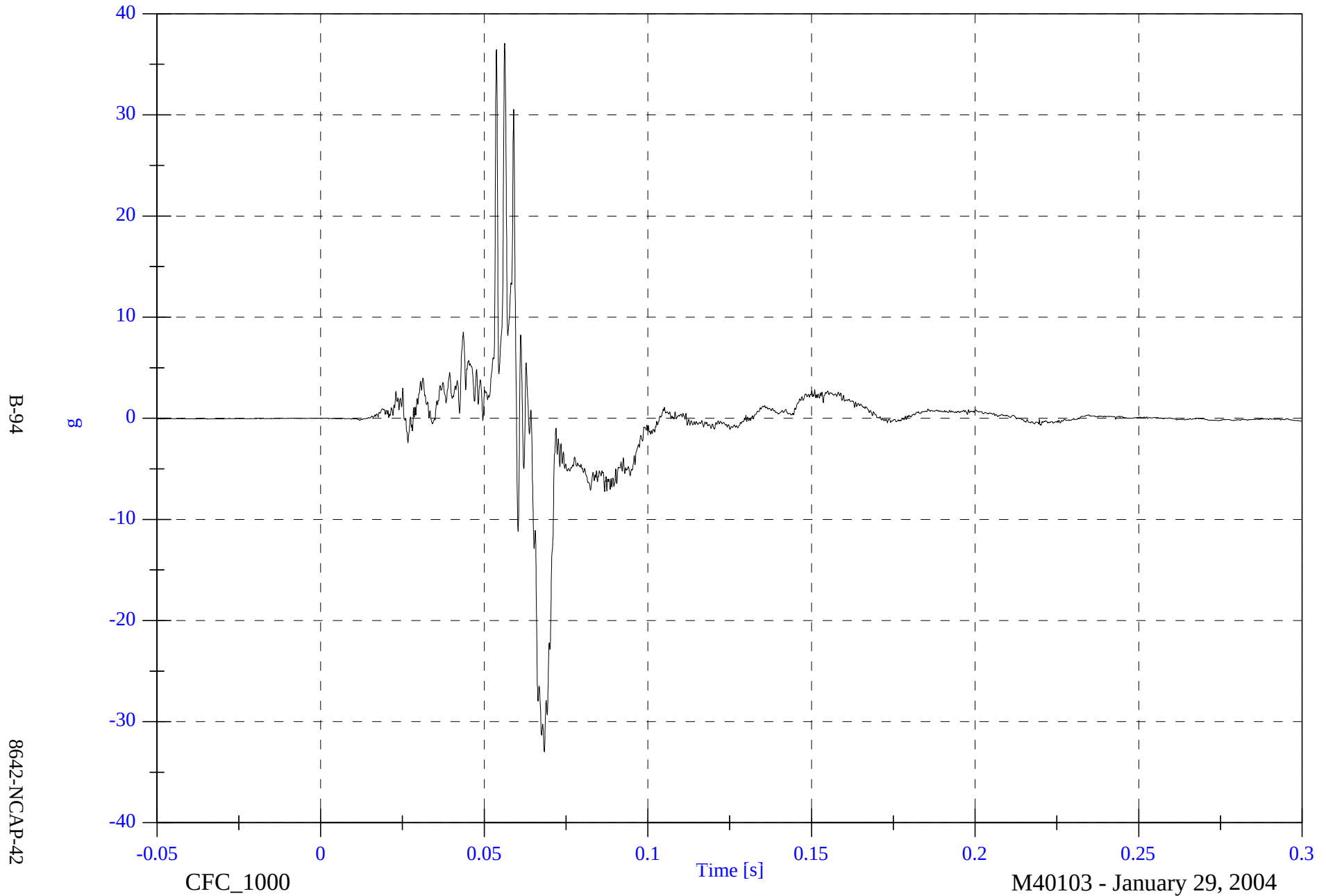


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Pelvic y

Max: 37.1 [g] at 0.056 [s]

Min: -33.0 [g] at 0.068 [s]

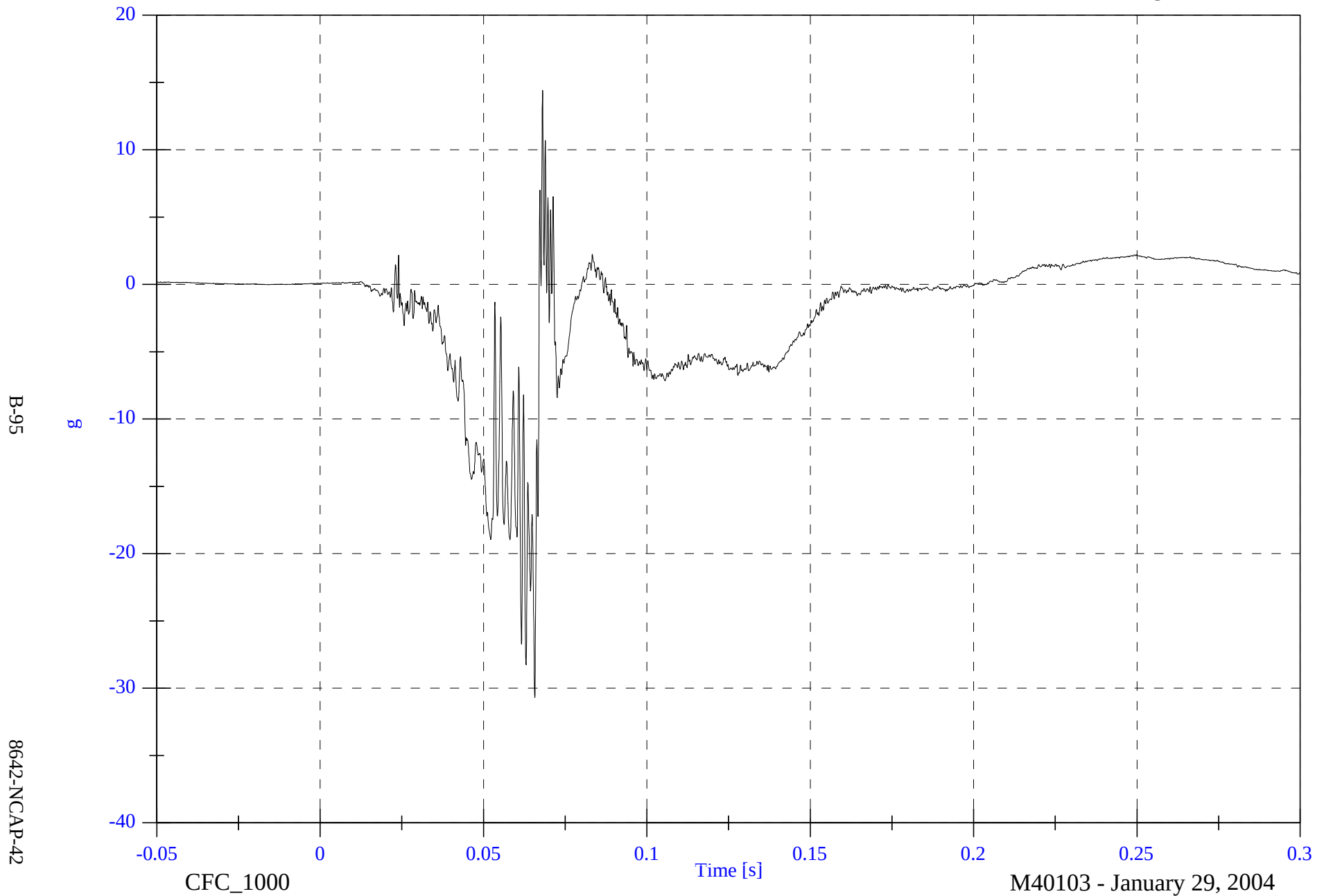


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Pelvic z

Max: 14.4 [g] at 0.068 [s]

Min: -30.7 [g] at 0.066 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

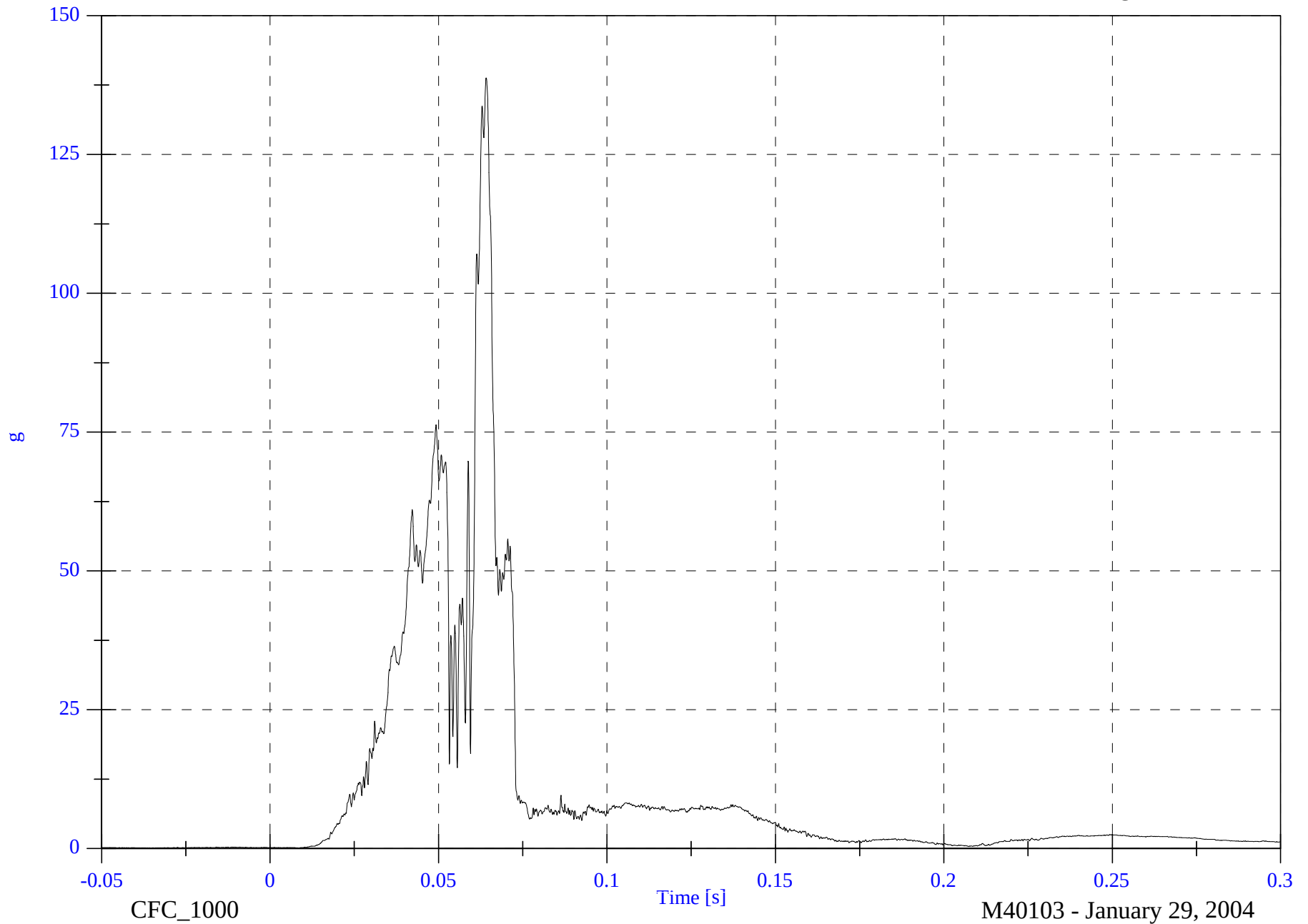
V1P2 Pelvic Resultant

Max: 138.8 [g] at 0.064 [s]

Min: 0.1 [g] at -0.035 [s]

B-96

8642-NCAP-42

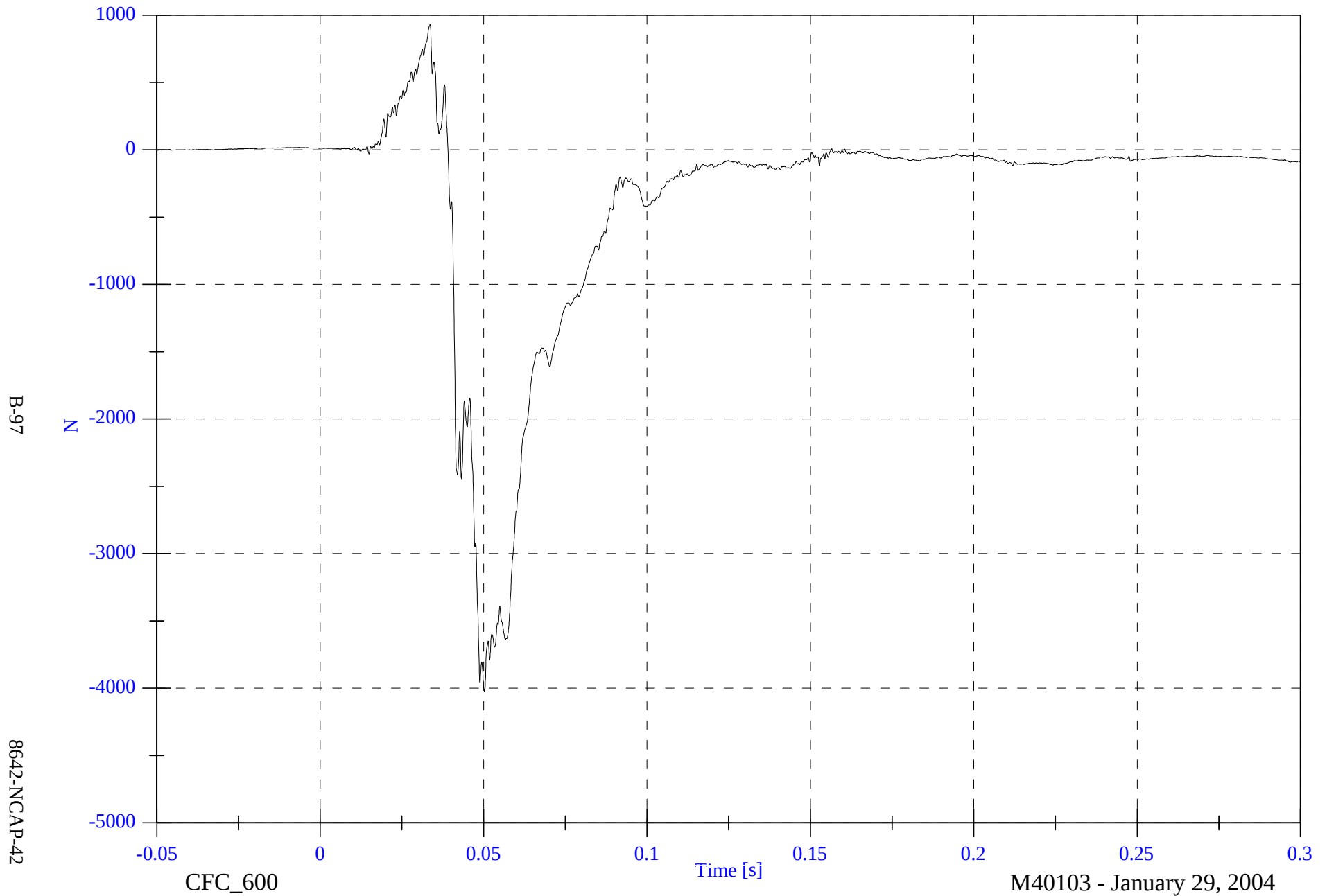


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Left Femur z

Max: 931.2 [N] at 0.034 [s]

Min: -4024.4 [N] at 0.050 [s]

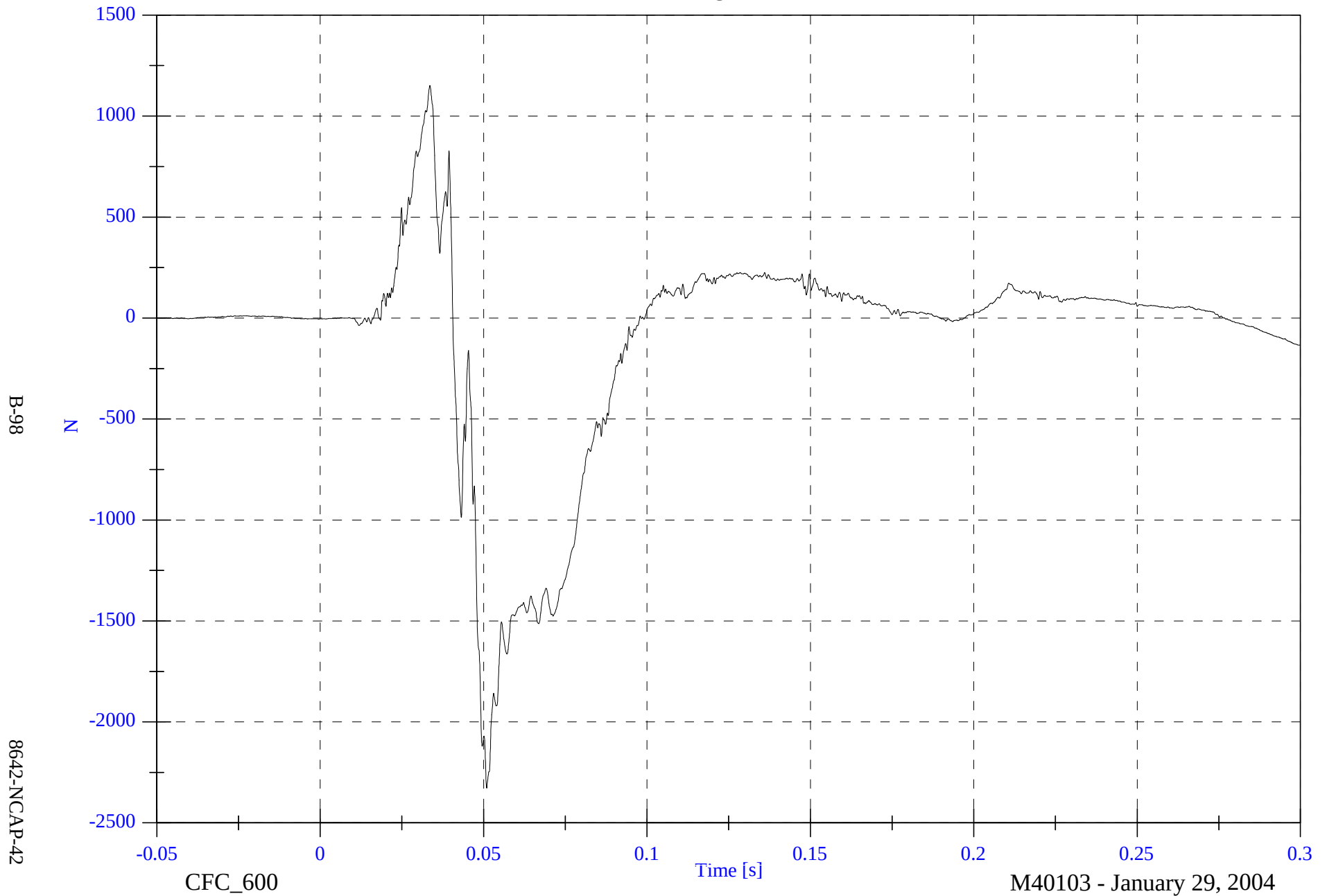


2004 NCAP Test 6 2004 Chevrolet Colorado

Max: 1151.9 [N] at 0.034 [s]

Min: -2327.9 [N] at 0.051 [s]

V1P2 Right Femur z

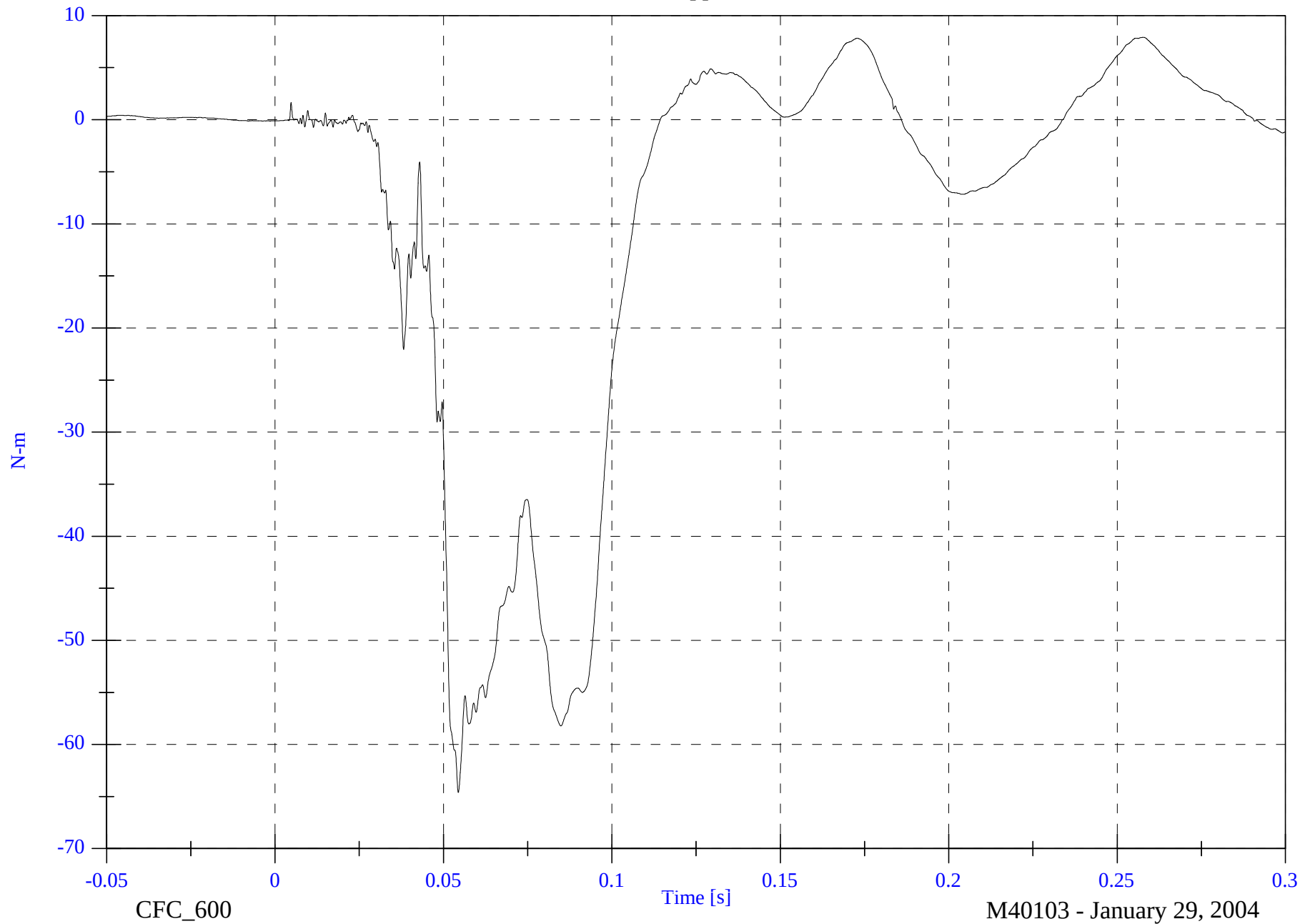


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Left Upper Tibia Mx

Max: 7.9 [N-m] at 0.258 [s]

Min: -64.6 [N-m] at 0.054 [s]



B-99

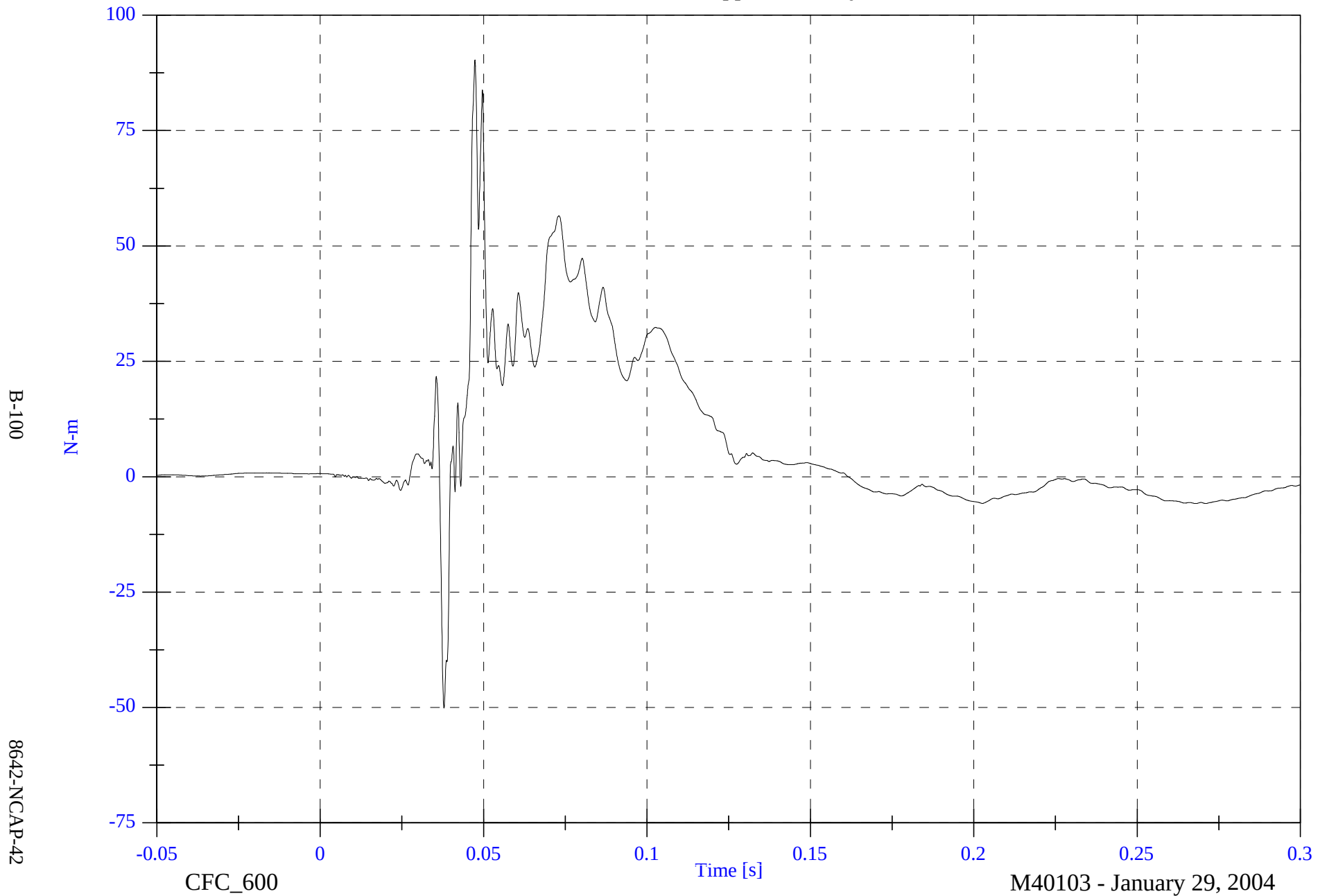
8642-NCAP-42

2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Left Upper Tibia My

Max: 90.3 [N-m] at 0.047 [s]

Min: -50.1 [N-m] at 0.038 [s]

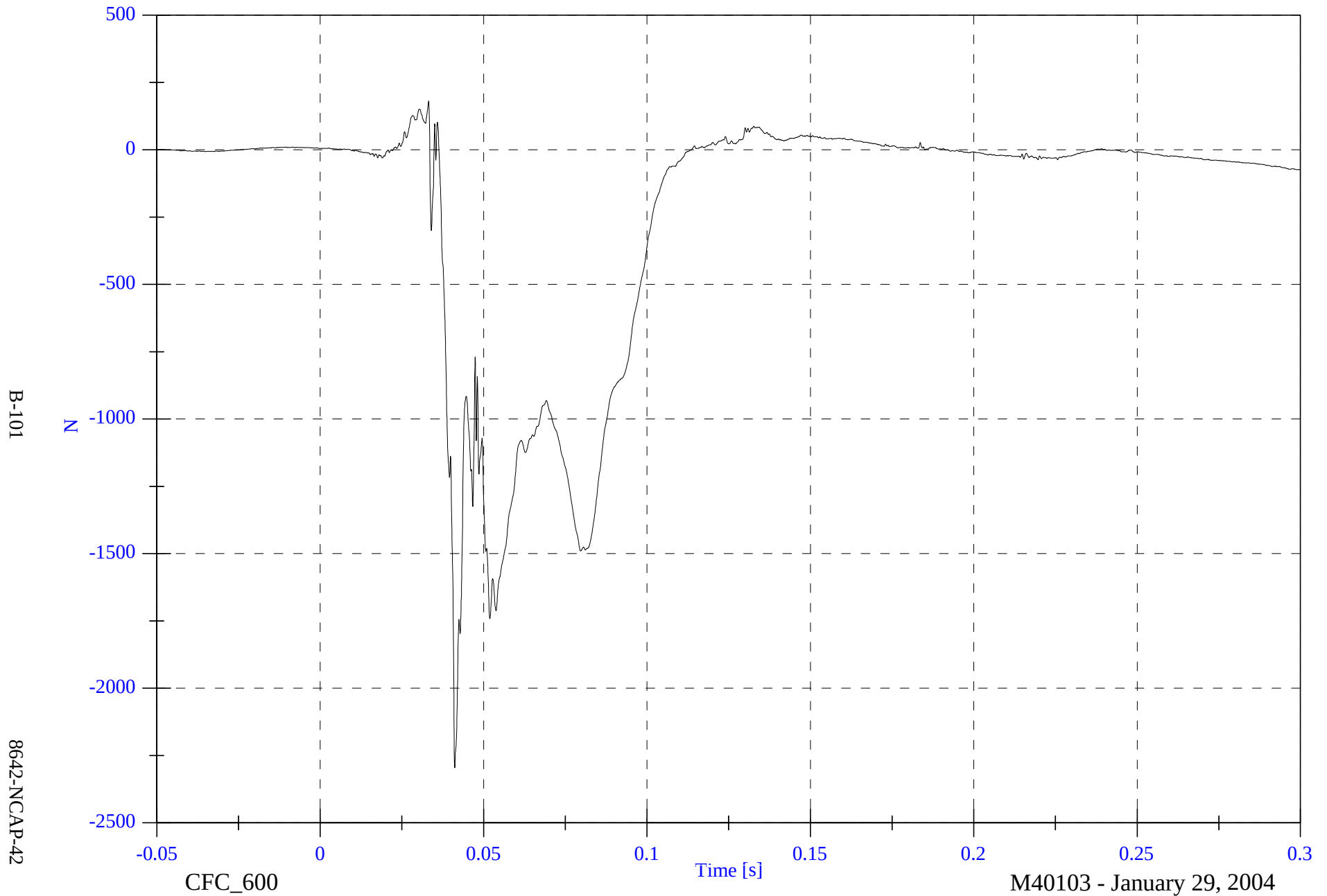


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Left Lower Tibia Fz

Max: 181.3 [N] at 0.033 [s]

Min: -2295.5 [N] at 0.041 [s]

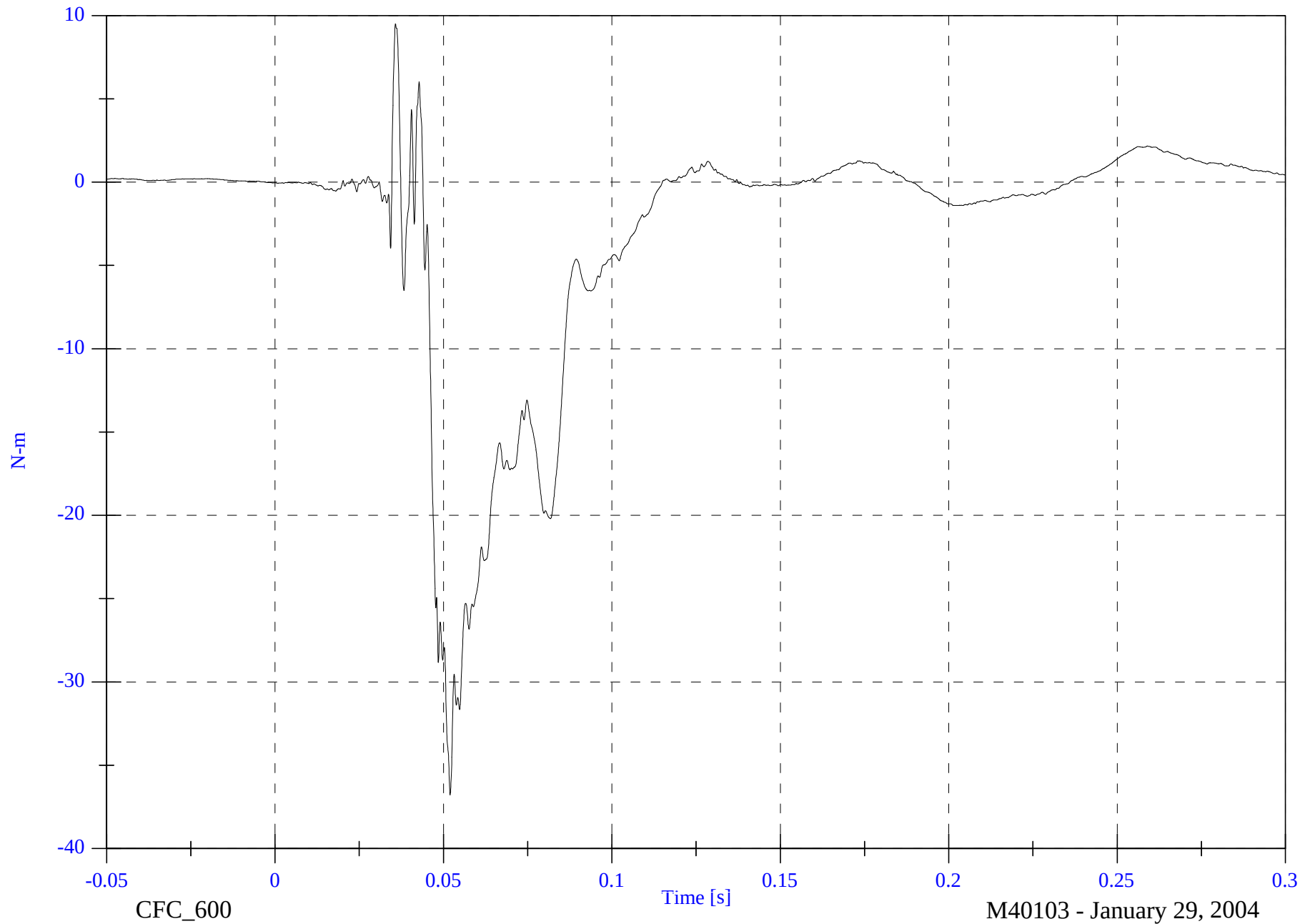


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Left Lower Tibia Mx

Max: 9.5 [N-m] at 0.036 [s]

Min: -36.8 [N-m] at 0.052 [s]

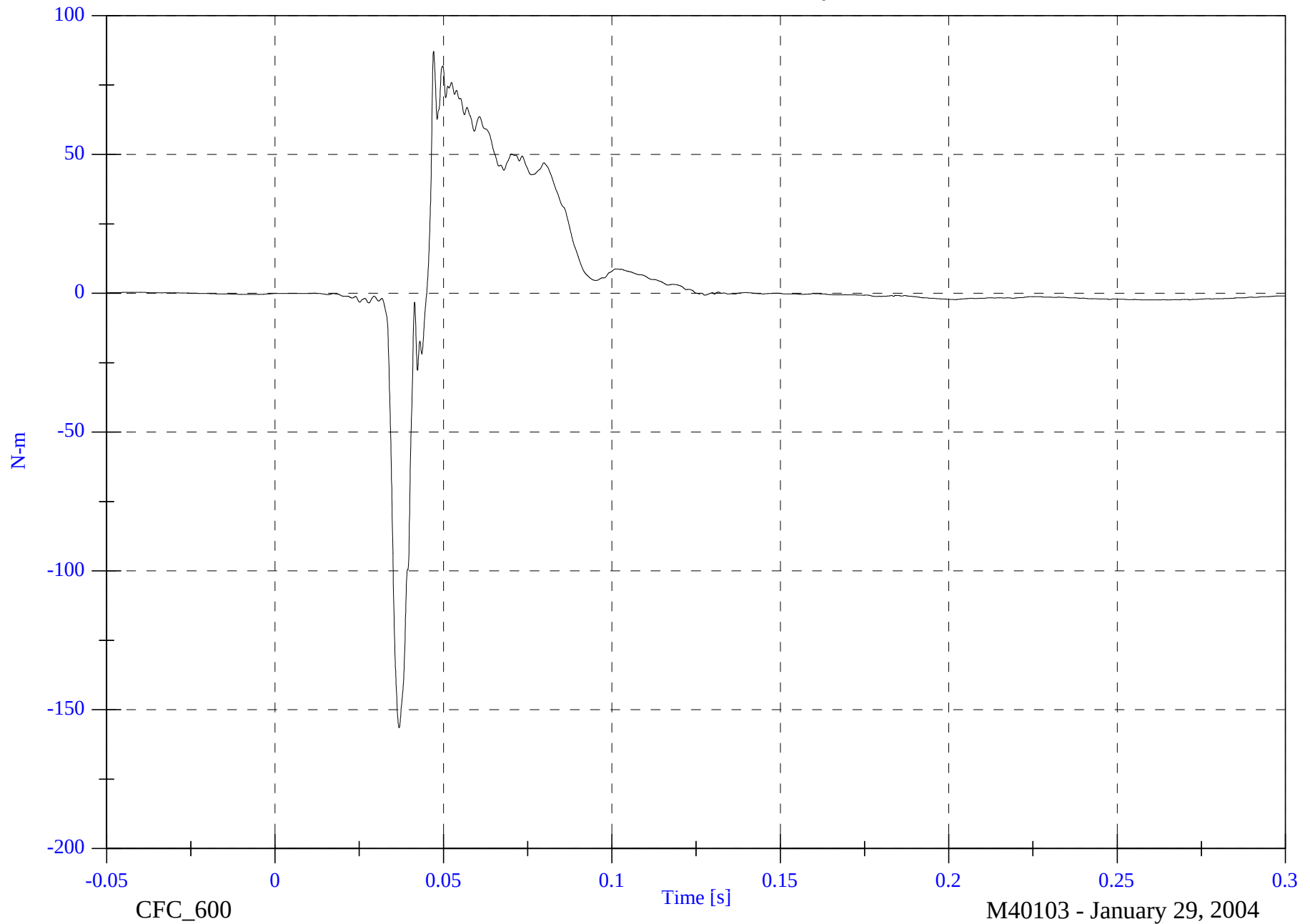


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Left Lower Tibia My

Max: 87.1 [N-m] at 0.047 [s]

Min: -156.5 [N-m] at 0.037 [s]

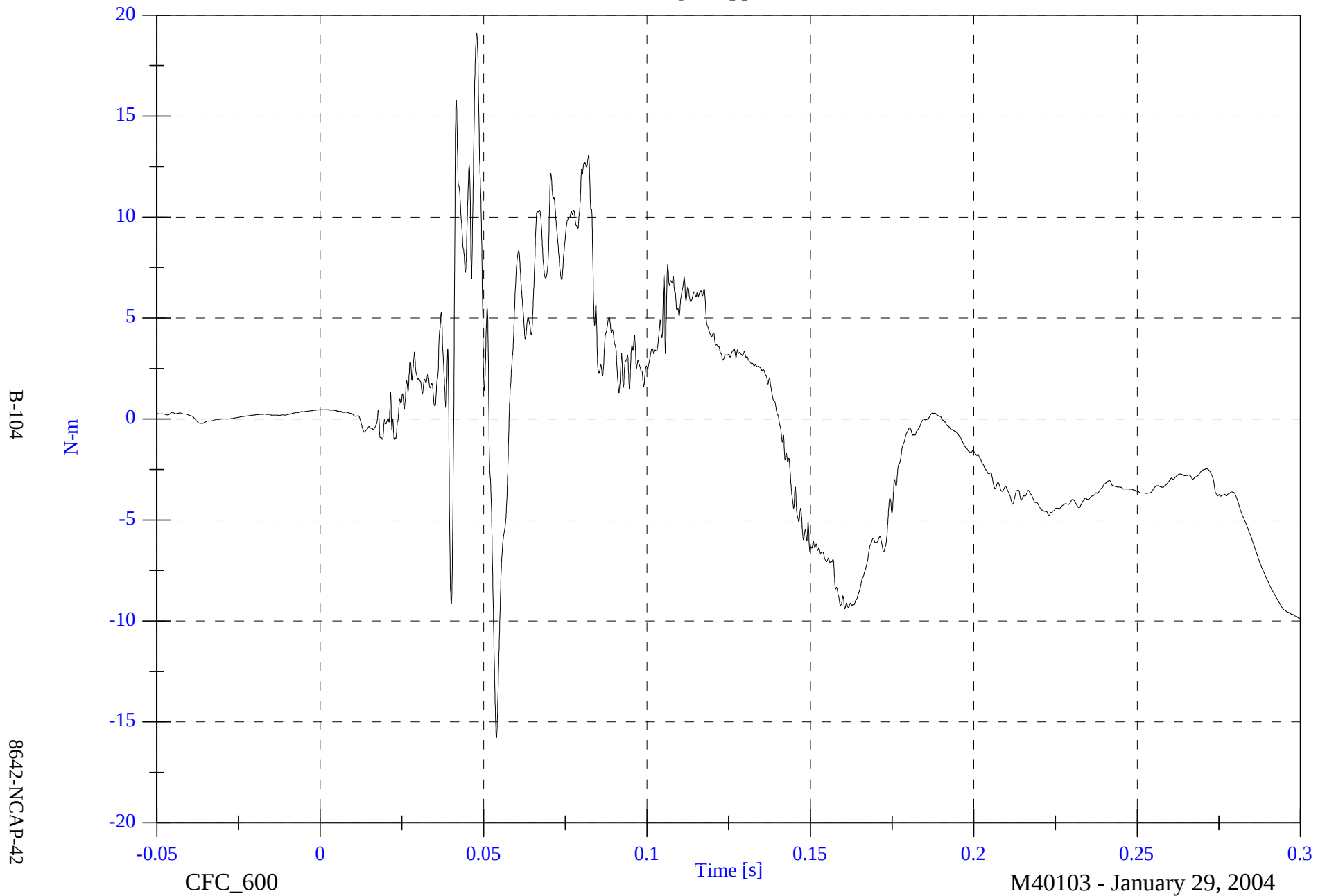


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Right Upper Tibia Mx

Max: 19.1 [N-m] at 0.048 [s]

Min: -15.8 [N-m] at 0.054 [s]

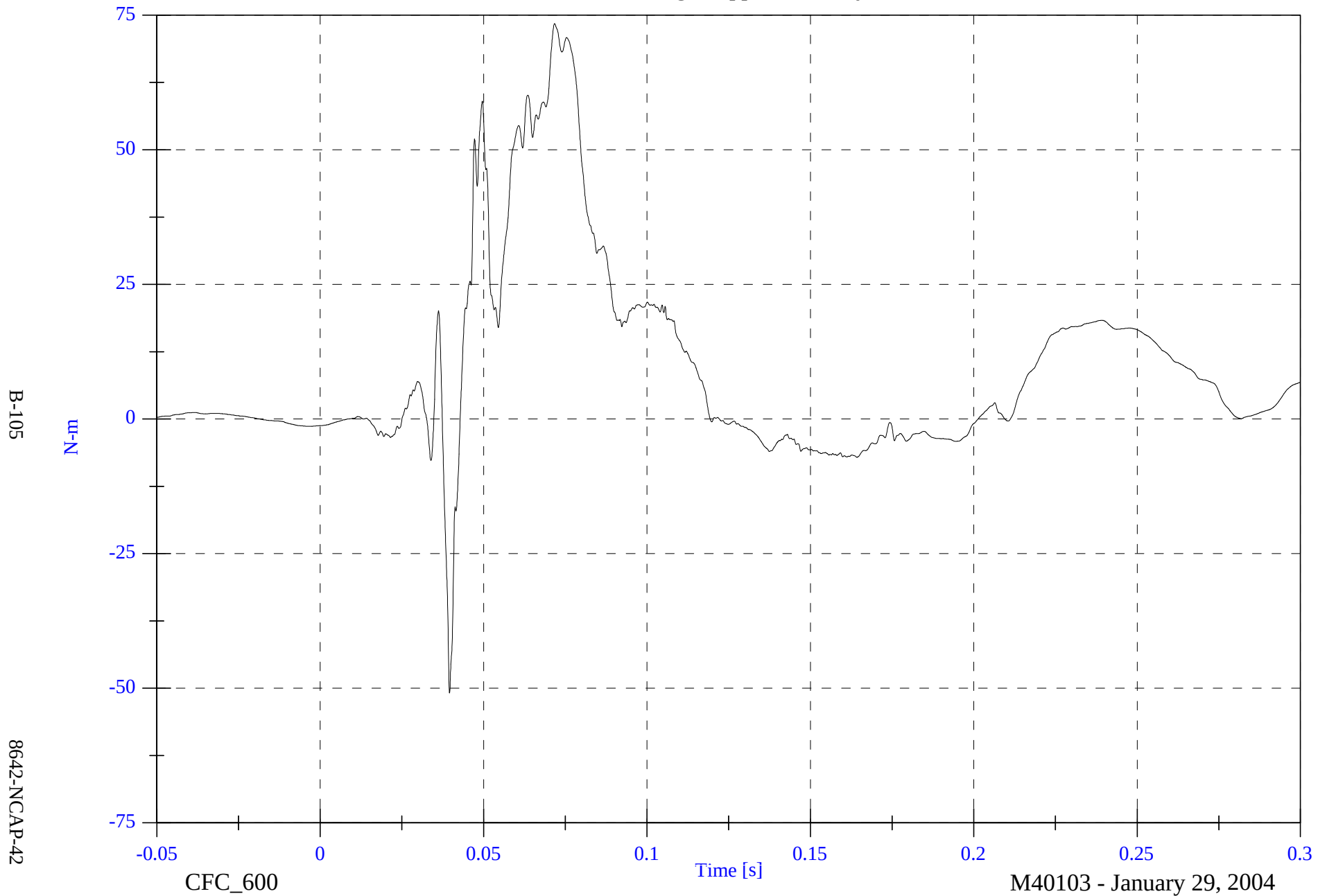


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Right Upper Tibia My

Max: 73.4 [N-m] at 0.072 [s]

Min: -50.9 [N-m] at 0.040 [s]

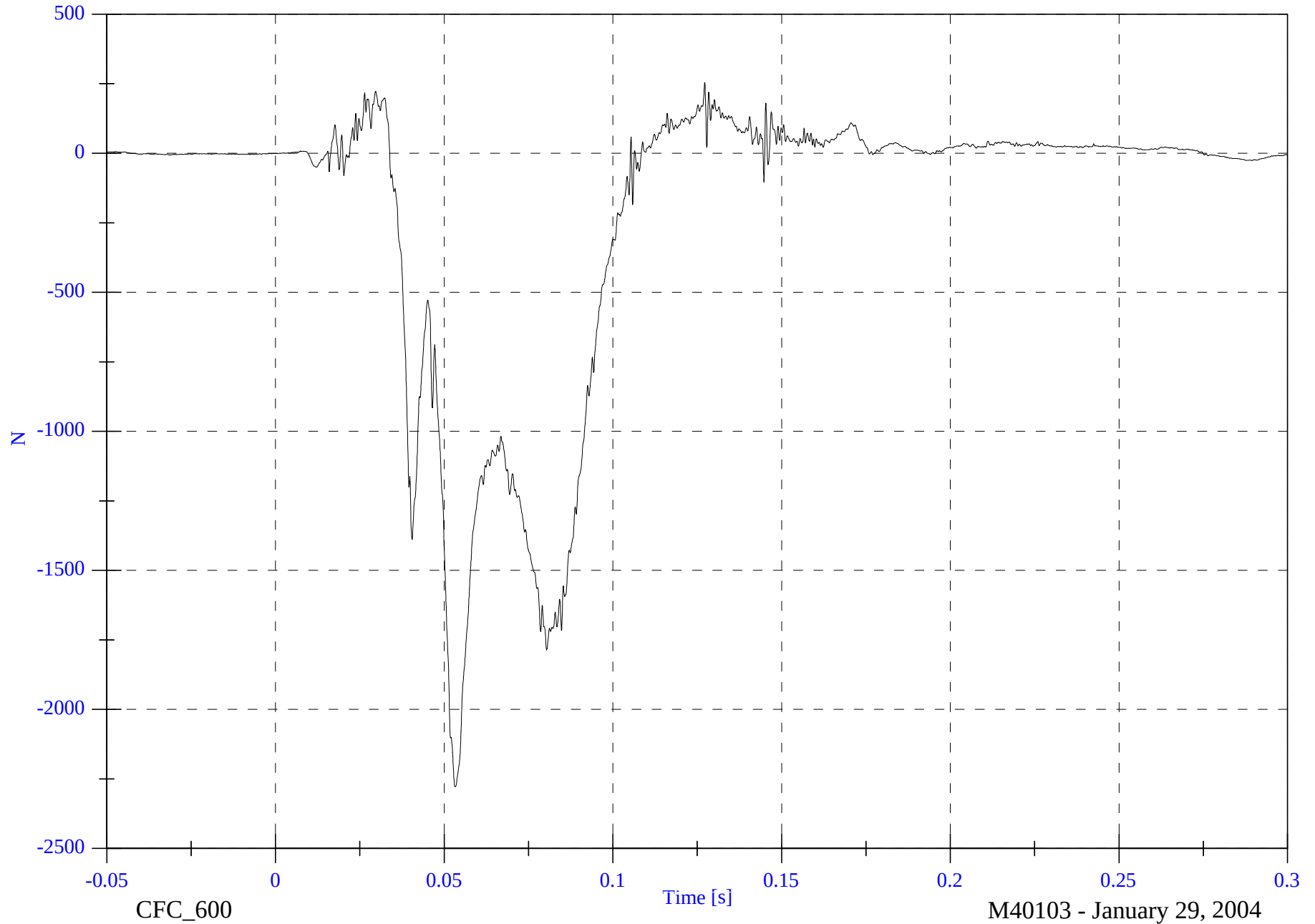


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Right Lower Tibia Fz

Max: 255.0 [N] at 0.127 [s]

Min: -2278.4 [N] at 0.053 [s]

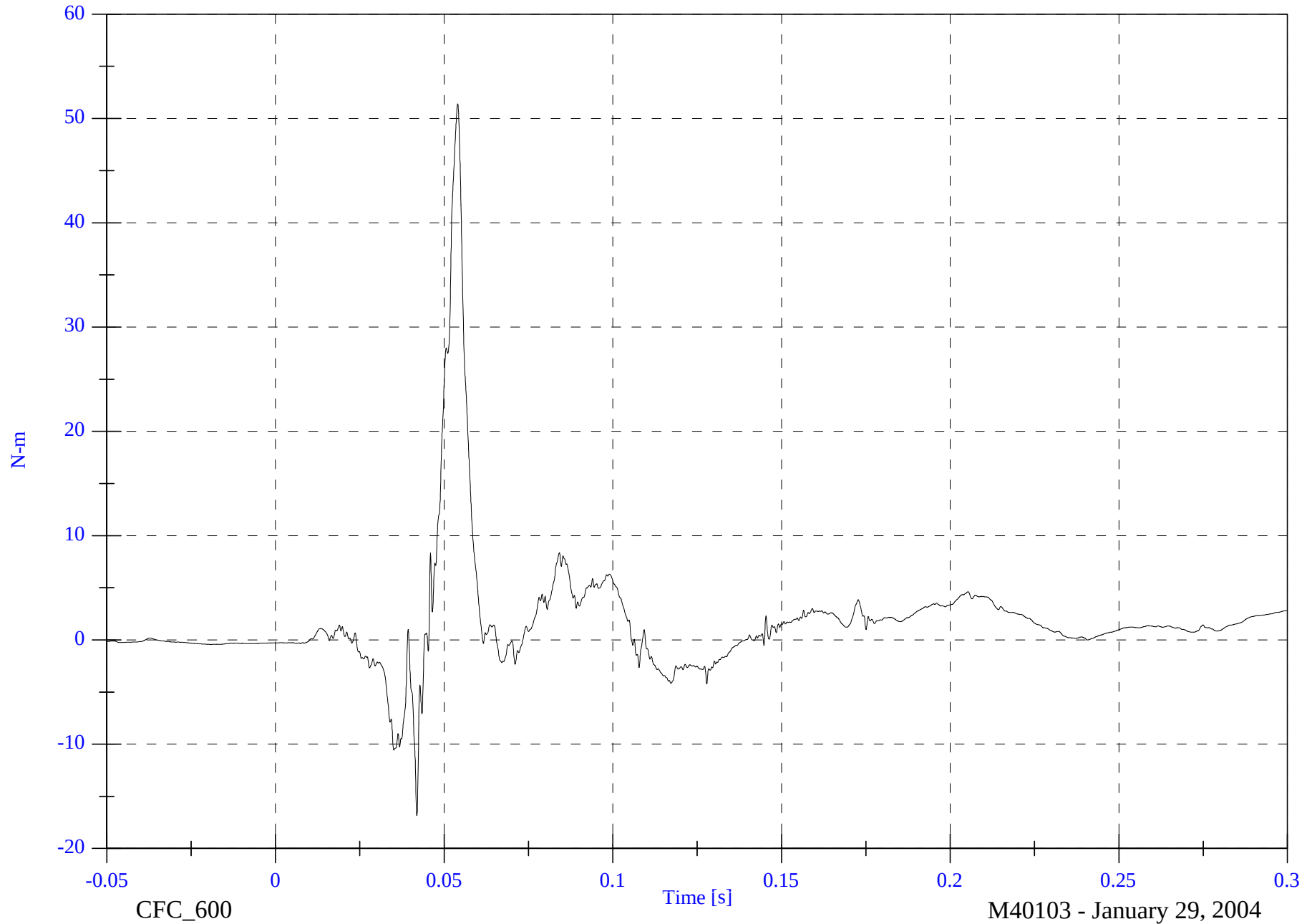


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Right Lower Tibia Mx

Max: 51.4 [N-m] at 0.054 [s]

Min: -16.9 [N-m] at 0.042 [s]



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CFC_600

Time [s]

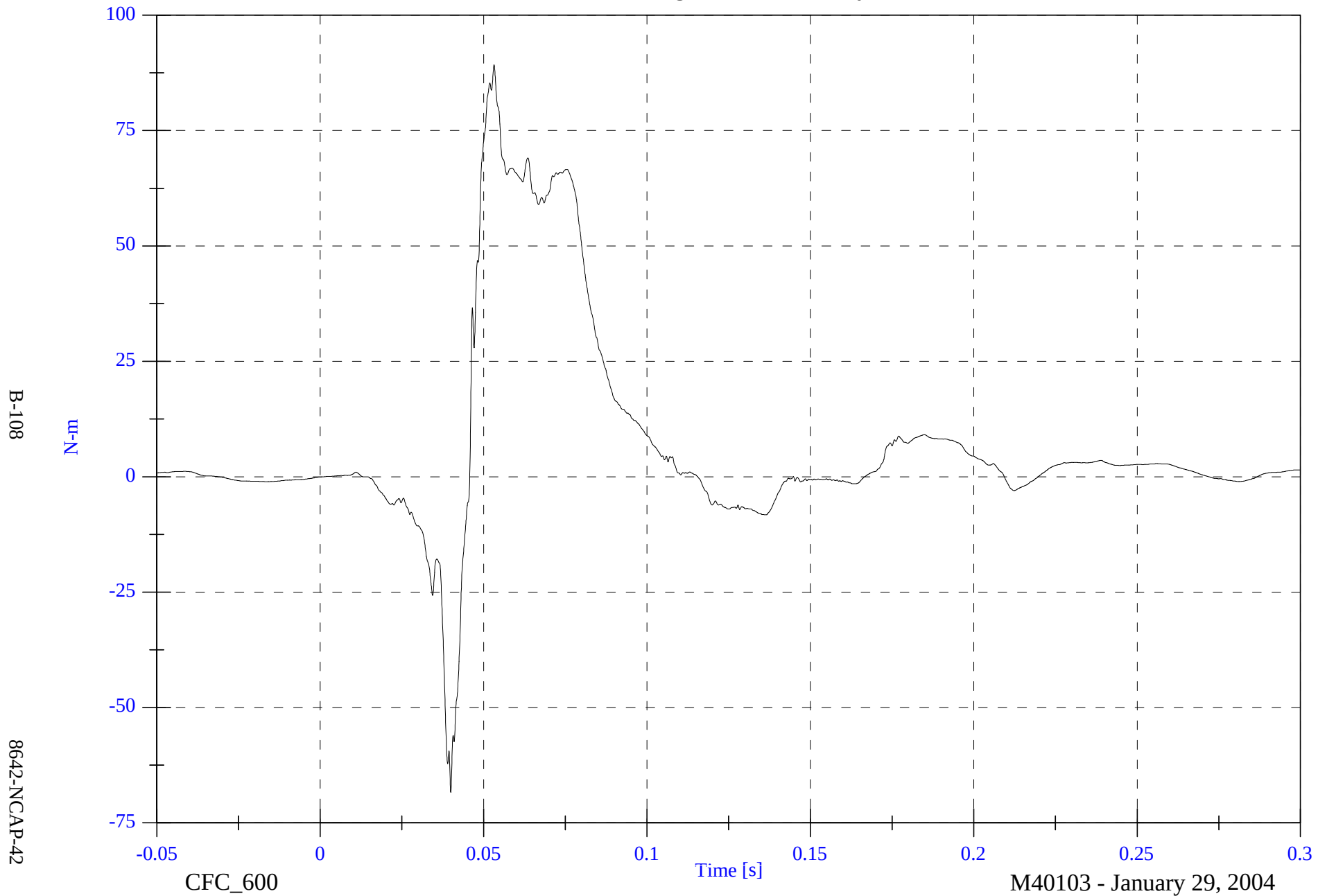
M40103 - January 29, 2004

2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Right Lower Tibia My

Max: 89.2 [N-m] at 0.053 [s]

Min: -68.4 [N-m] at 0.040 [s]

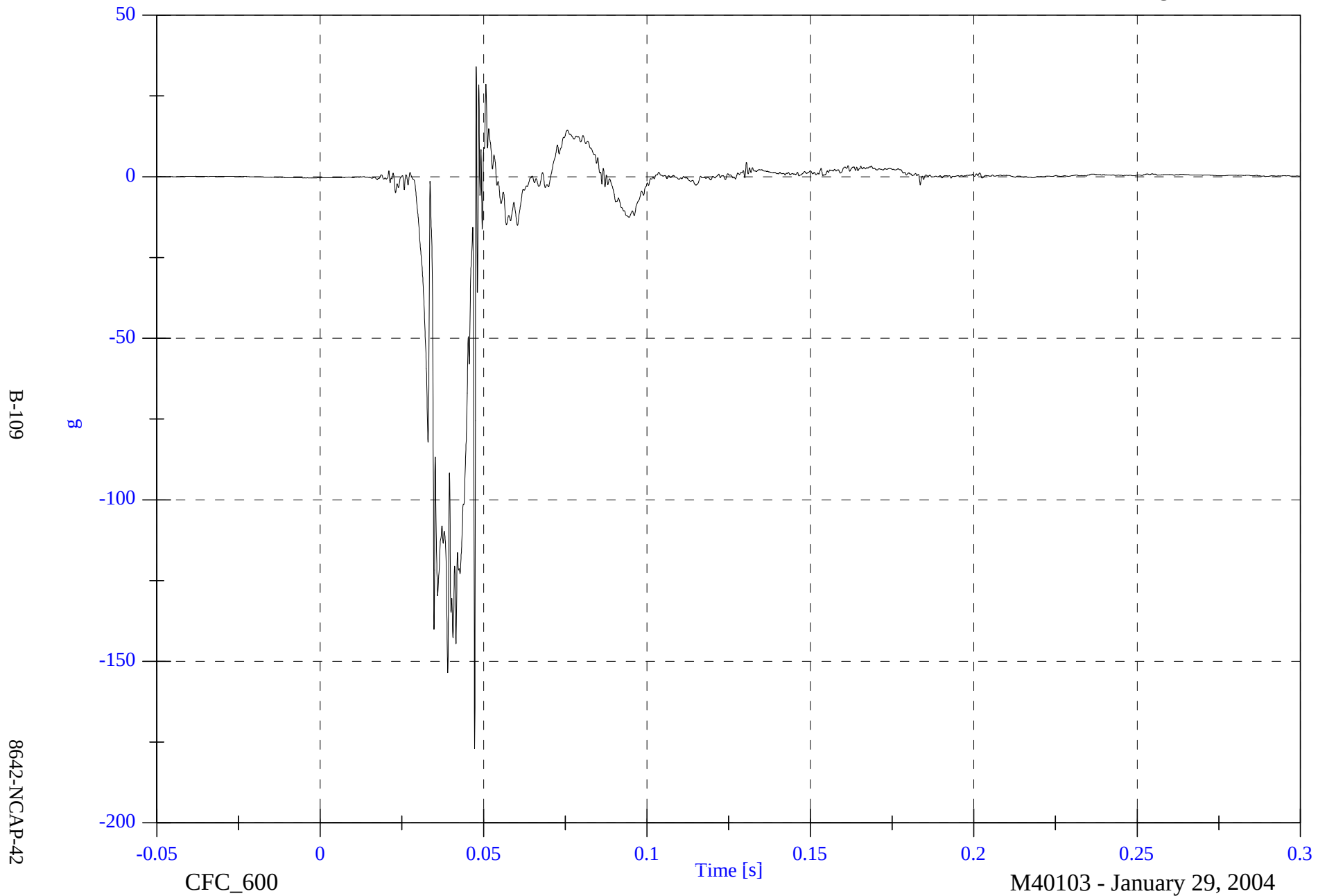


2004 NCAP Test 6 2004 Chevrolet Colorado

Max: 34.1 [g] at 0.048 [s]

Min: -177.0 [g] at 0.047 [s]

V1P2 Left Foot Aft x

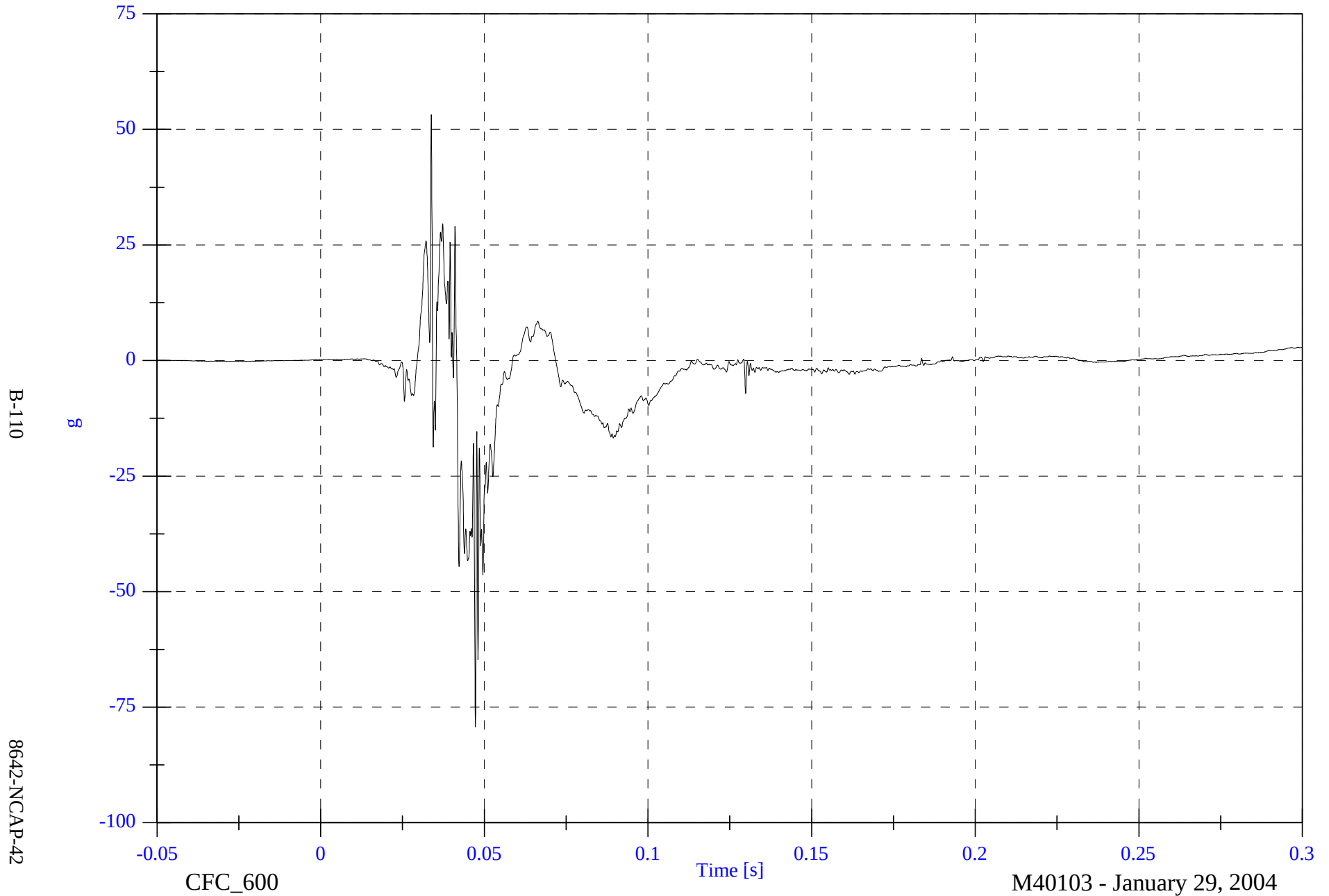


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Left Foot Aft z

Max: 53.2 [g] at 0.034 [s]

Min: -79.3 [g] at 0.047 [s]

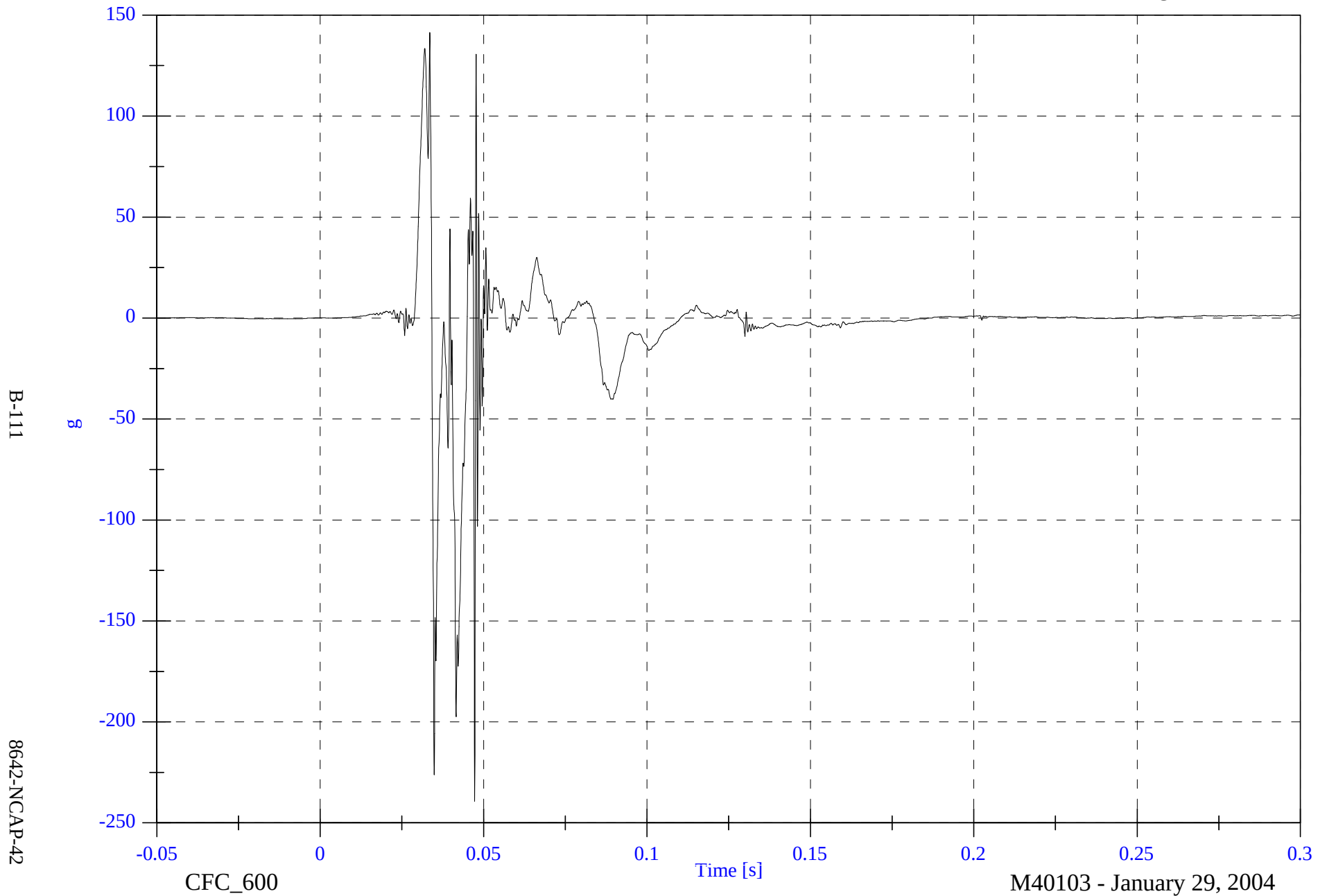


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Left Foot Fore z

Max: 141.4 [g] at 0.034 [s]

Min: -239.3 [g] at 0.047 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

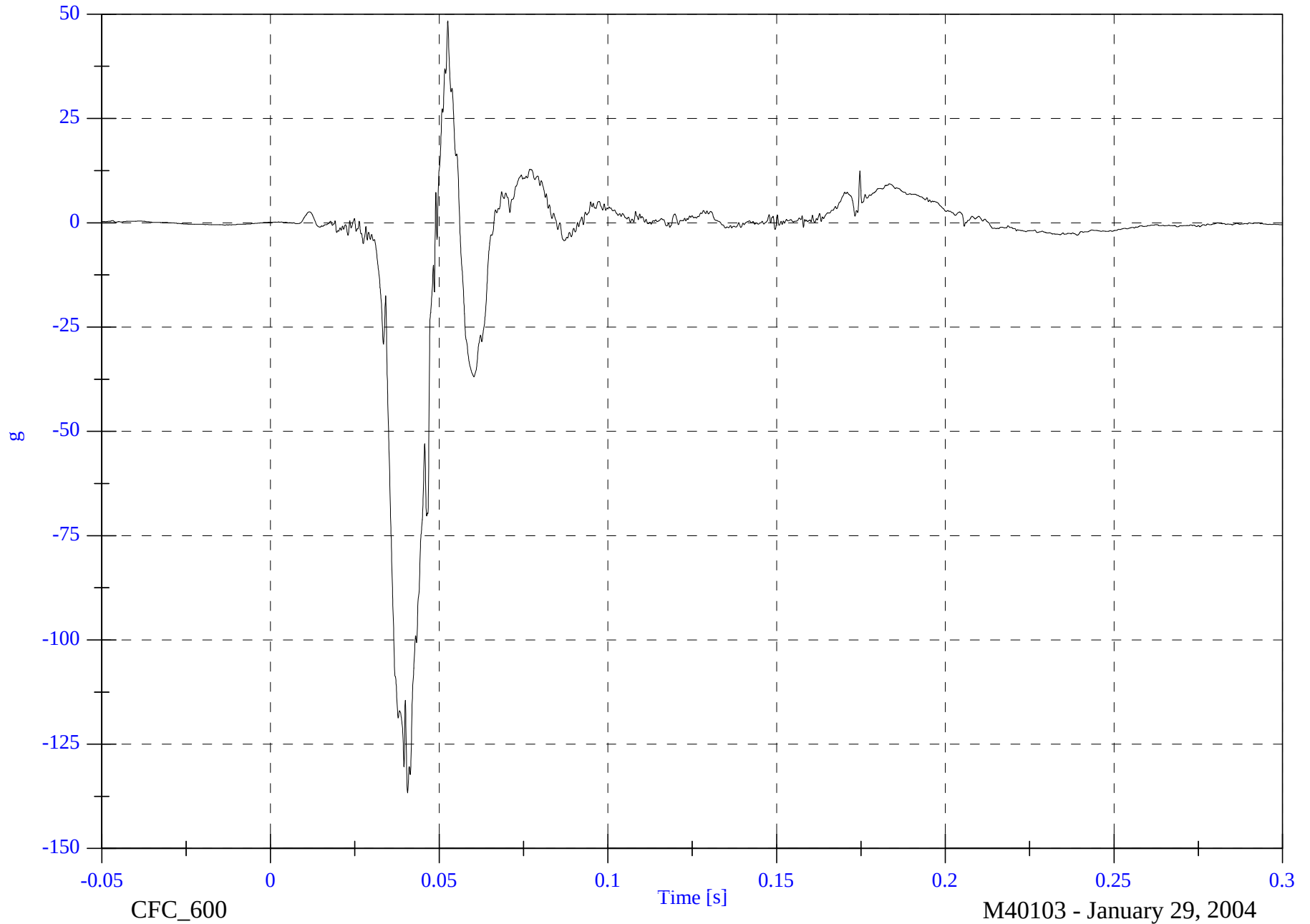
V1P2 Right Foot Aft x

Max: 48.4 [g] at 0.053 [s]

Min: -136.7 [g] at 0.041 [s]

B-112

8642-NCAP-42

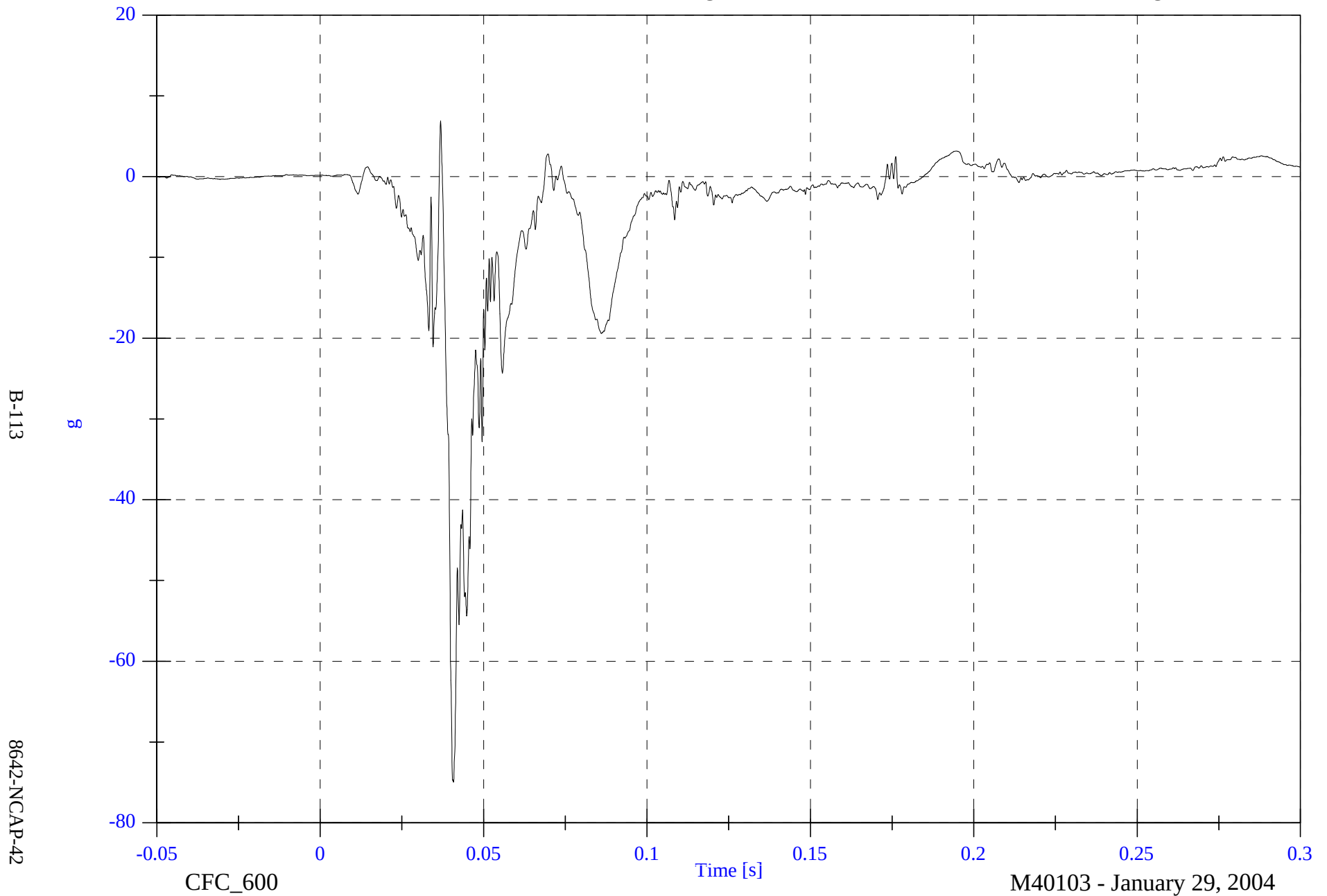


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Right Foot Aft z

Max: 6.9 [g] at 0.037 [s]

Min: -75.0 [g] at 0.041 [s]

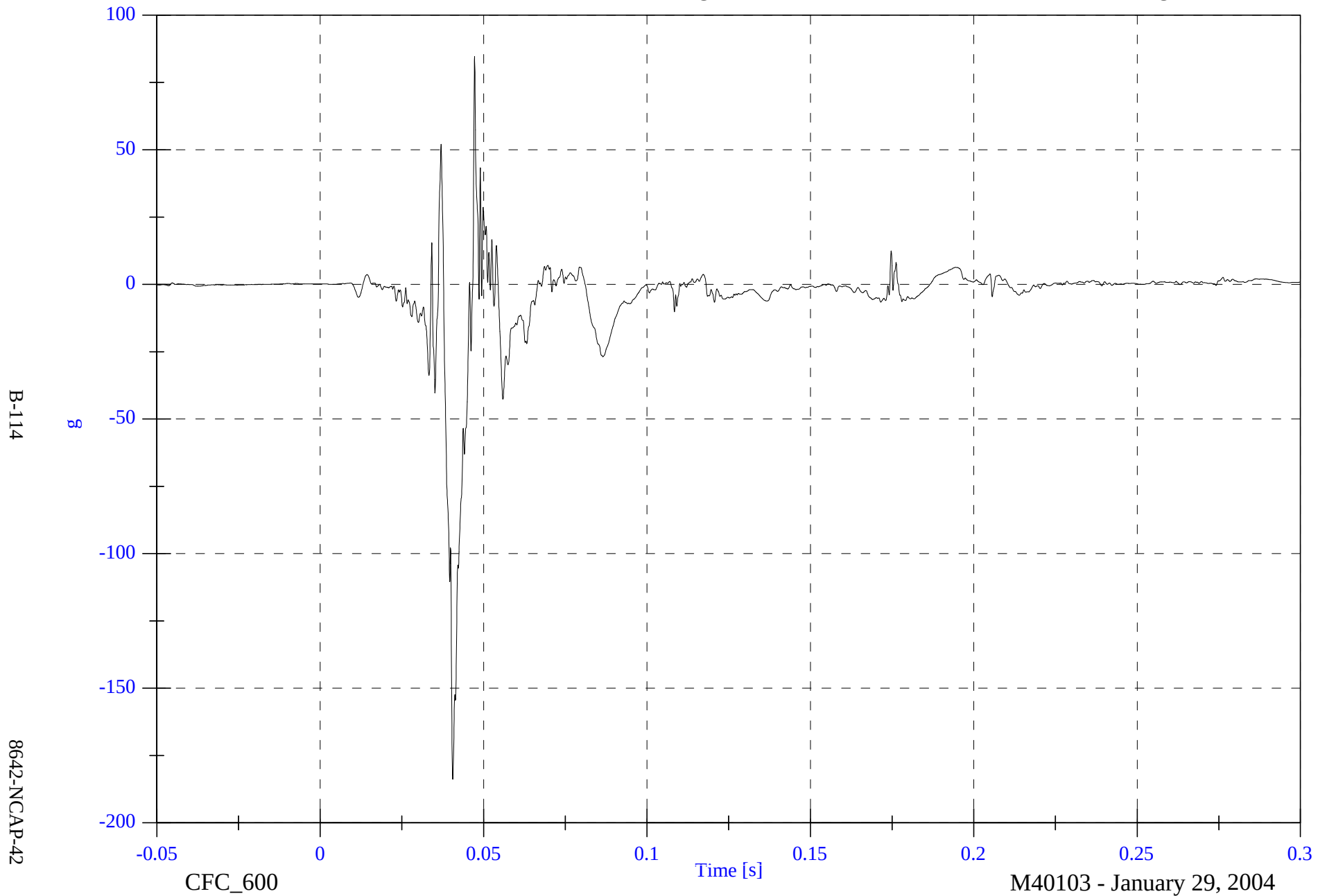


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P2 Right Foot Fore z

Max: 84.7 [g] at 0.047 [s]

Min: -183.8 [g] at 0.041 [s]

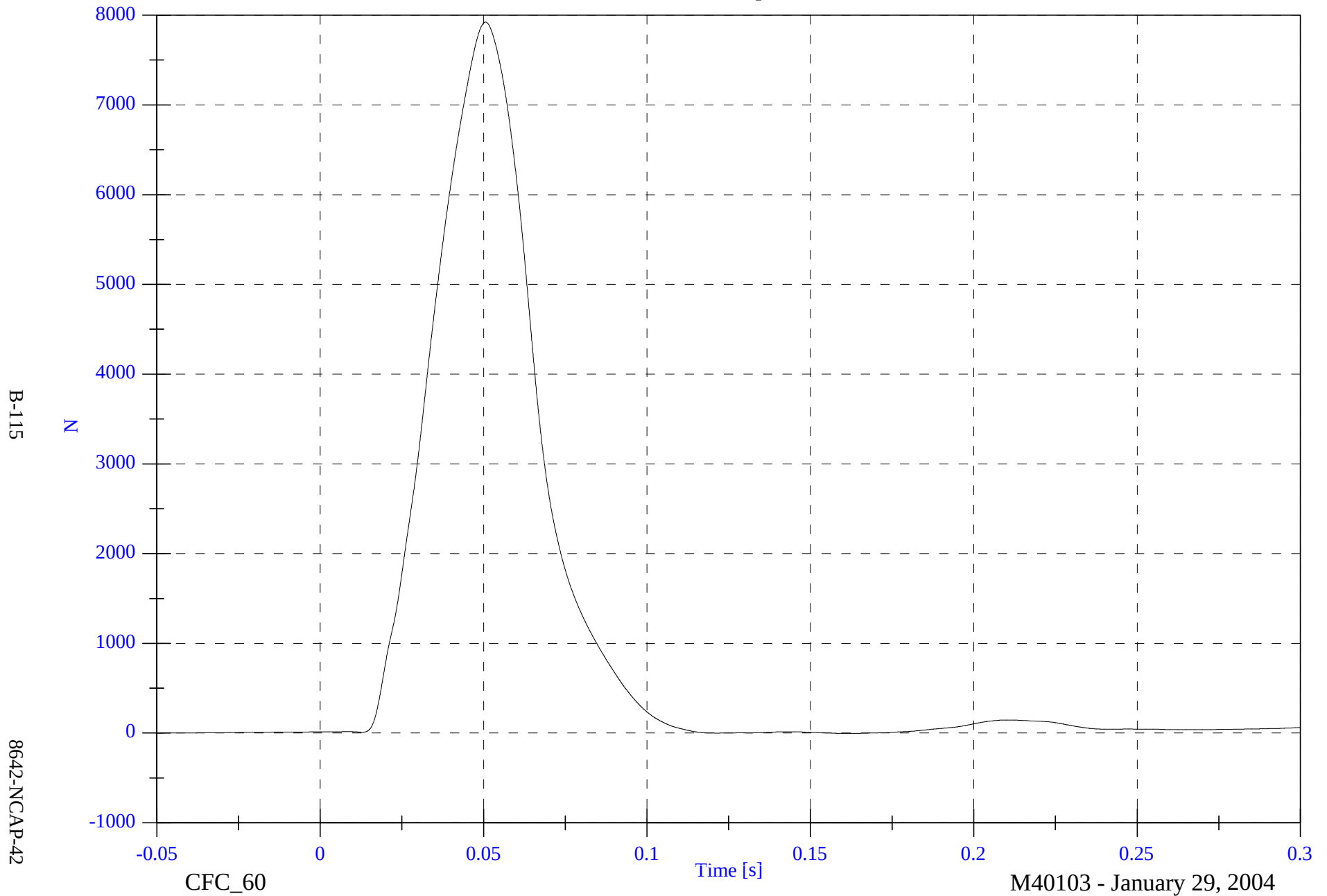


2004 NCAP Test 6 2004 Chevrolet Colorado

V1 RFP Lap Belt

Max: 7922.7 [N] at 0.051 [s]

Min: -3.0 [N] at 0.162 [s]

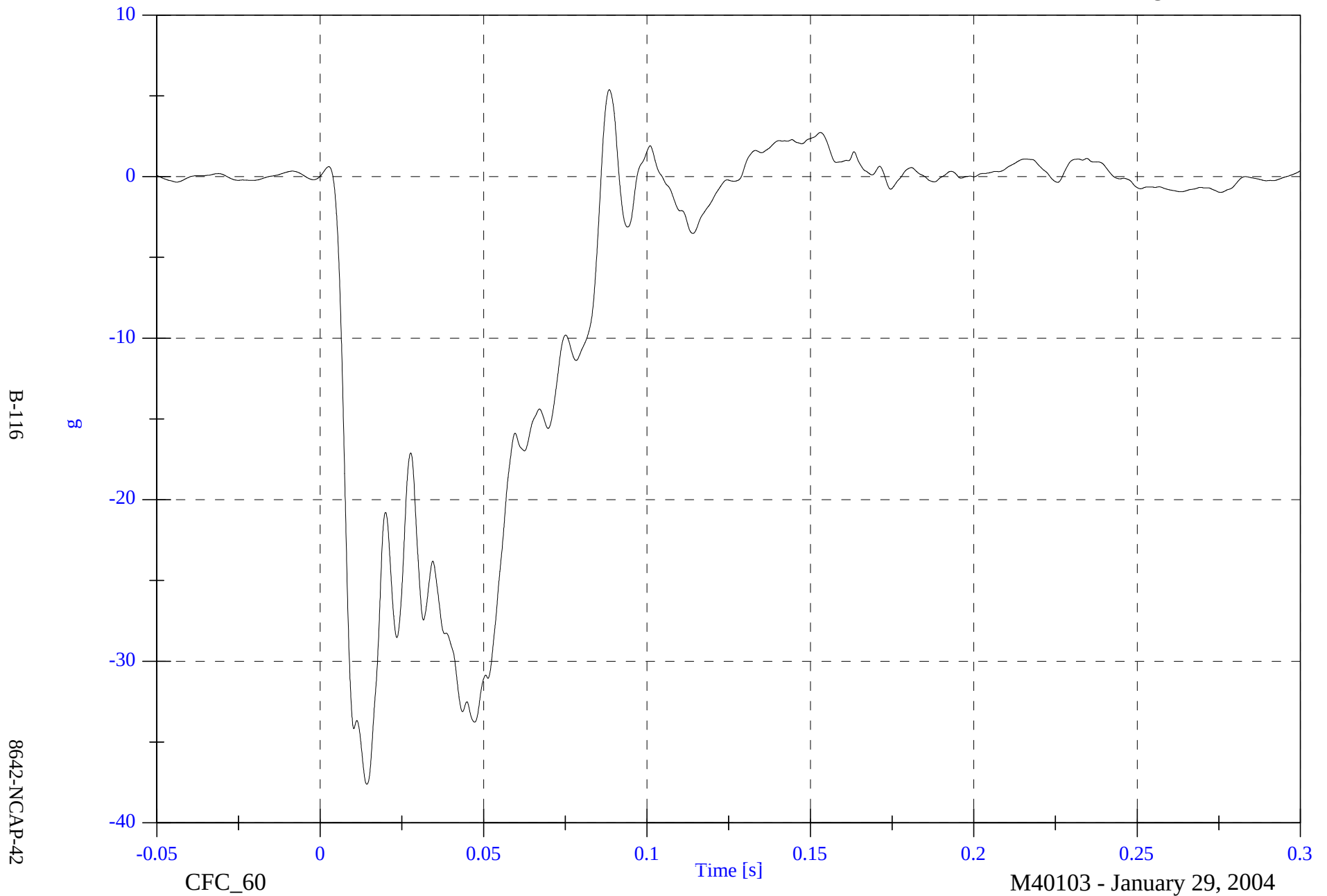


2004 NCAP Test 6 2004 Chevrolet Colorado

V1 Left Rear #1x

Max: 5.4 [g] at 0.088 [s]

Min: -37.6 [g] at 0.014 [s]

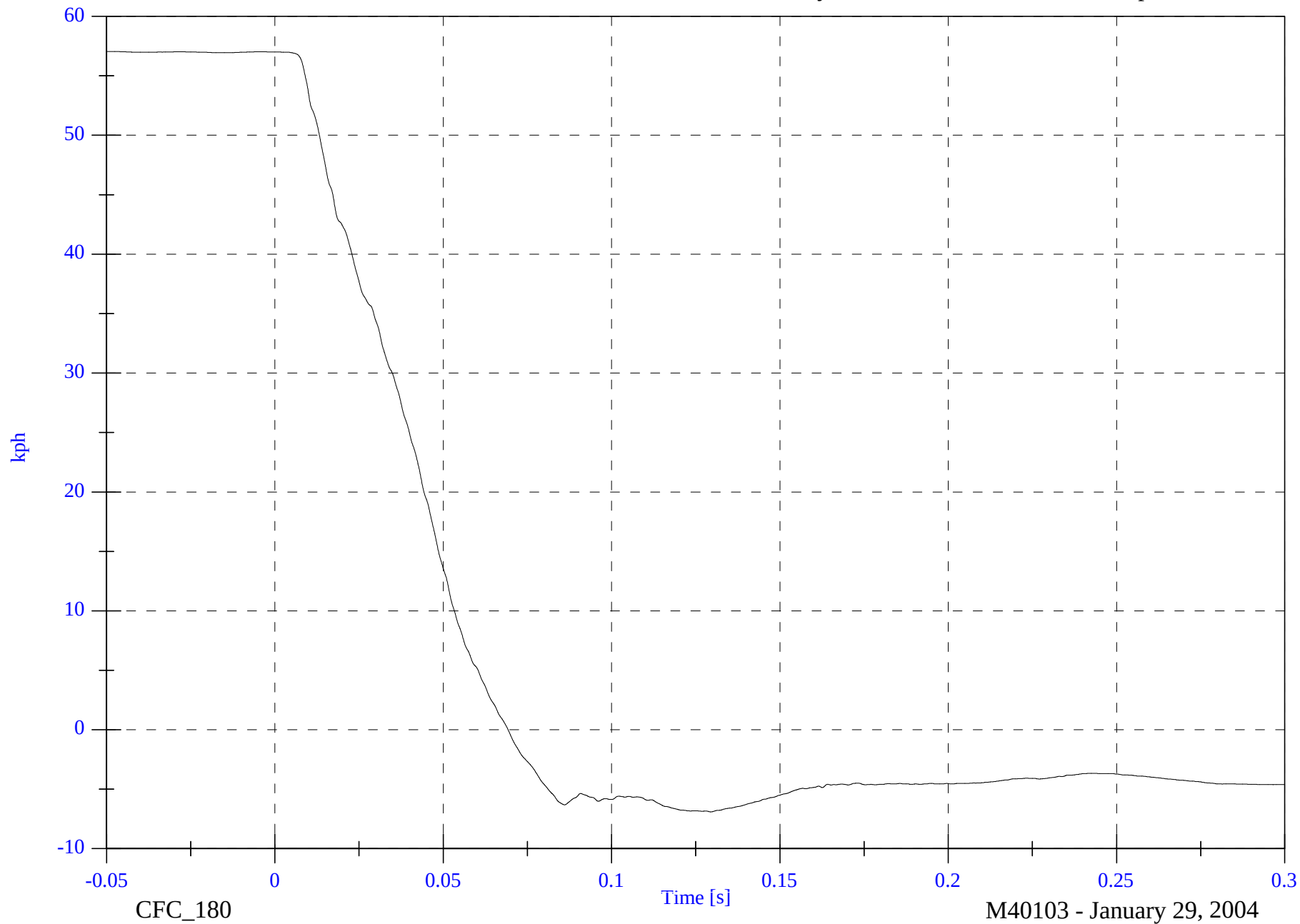


2004 NCAP Test 6 2004 Chevrolet Colorado

Max: 57.0 [kph] at -0.049 [s]

V1 Left Rear #1x Velocity

Min: -6.9 [kph] at 0.129 [s]



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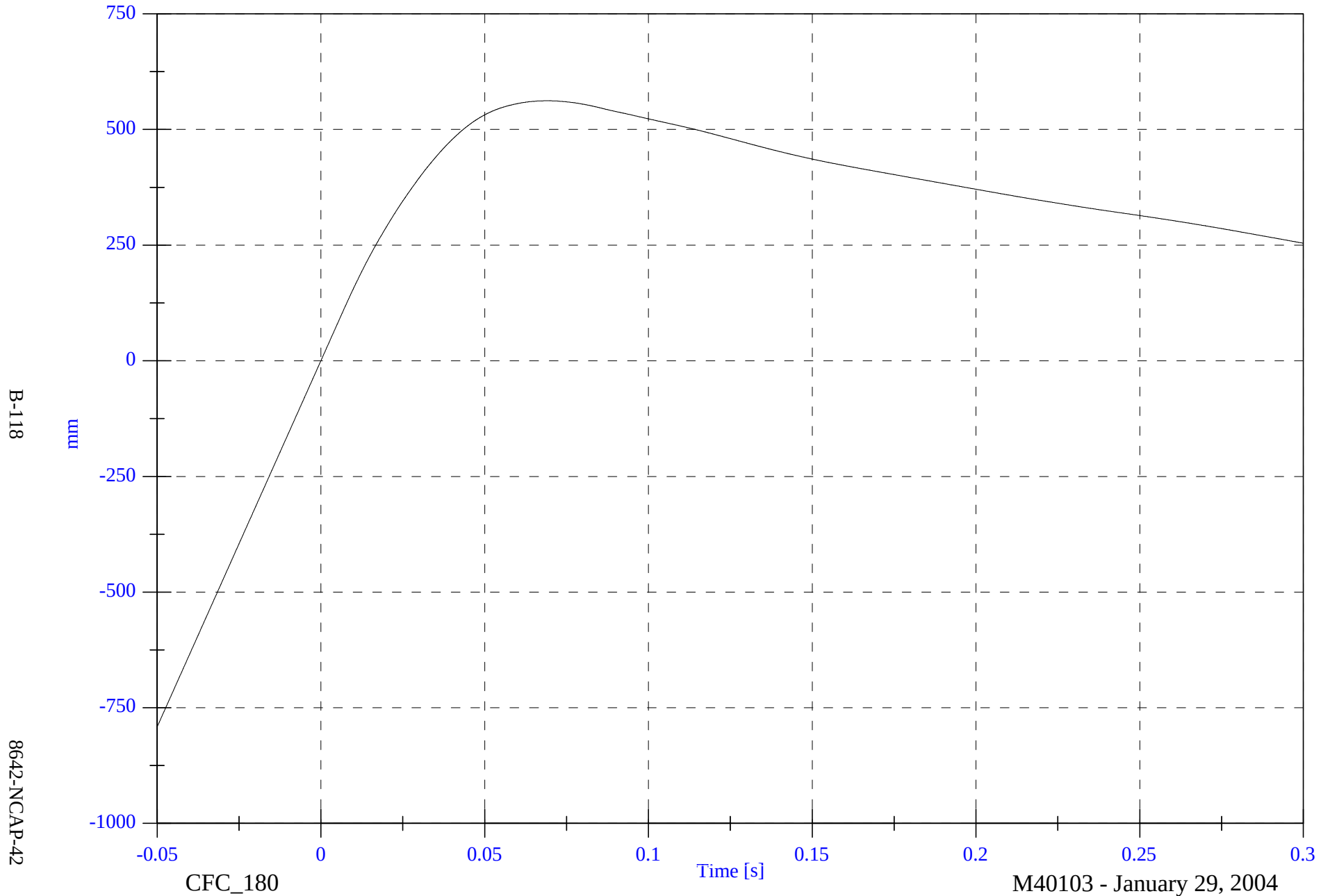
8642-NCAP-42

2004 NCAP Test 6 2004 Chevrolet Colorado

V1 Left Rear #1x Displacement

Max: 562.1 [mm] at 0.069 [s]

Min: -791.6 [mm] at -0.050 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

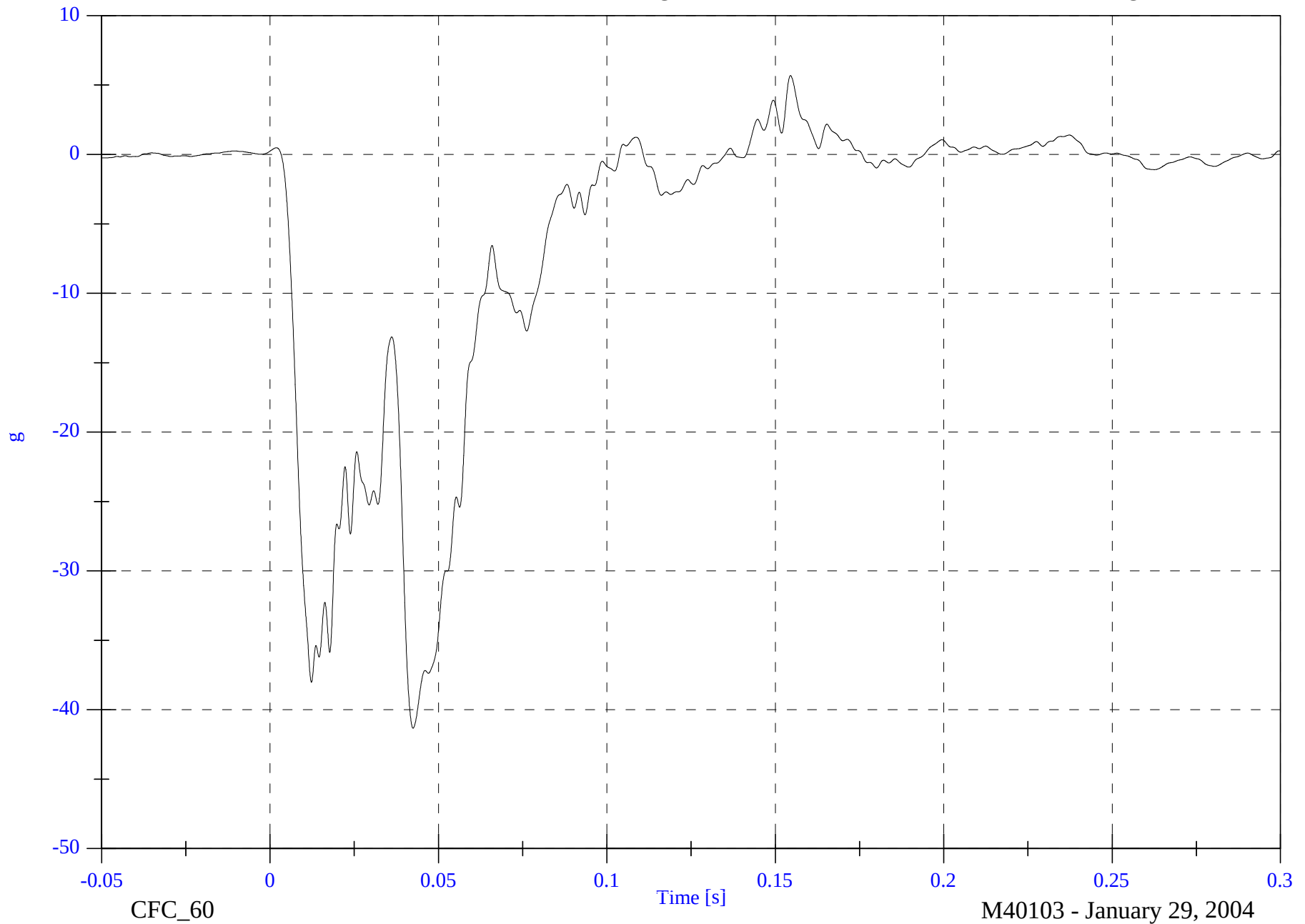
V1 Right Rear #2x

Max: 5.7 [g] at 0.154 [s]

Min: -41.3 [g] at 0.042 [s]

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2004 NCAP Test 6 2004 Chevrolet Colorado

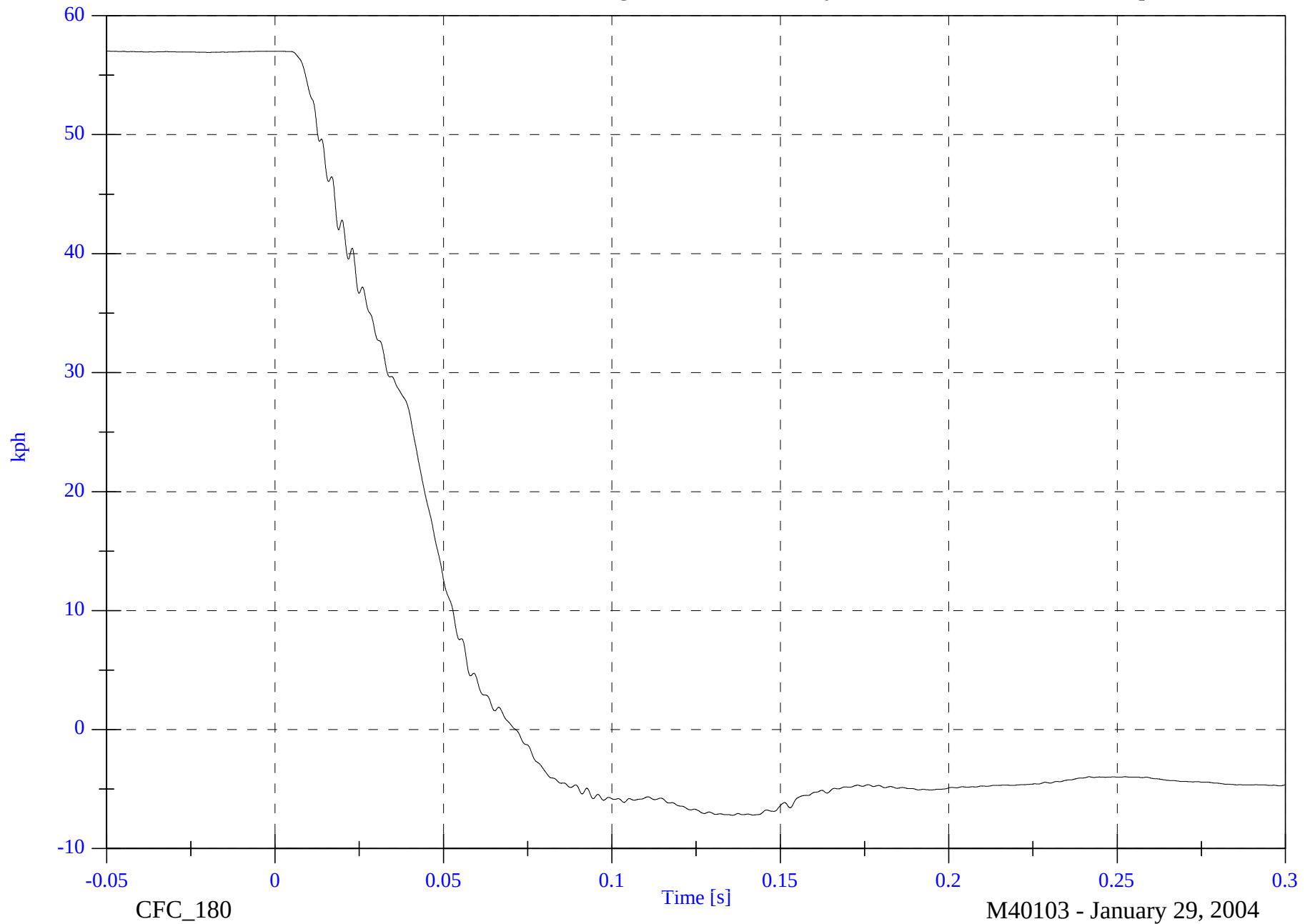
V1 Right Rear #2x Velocity

Max: 57.0 [kph] at -0.050 [s]

Min: -7.2 [kph] at 0.136 [s]

B-120

8642-NCAP-42

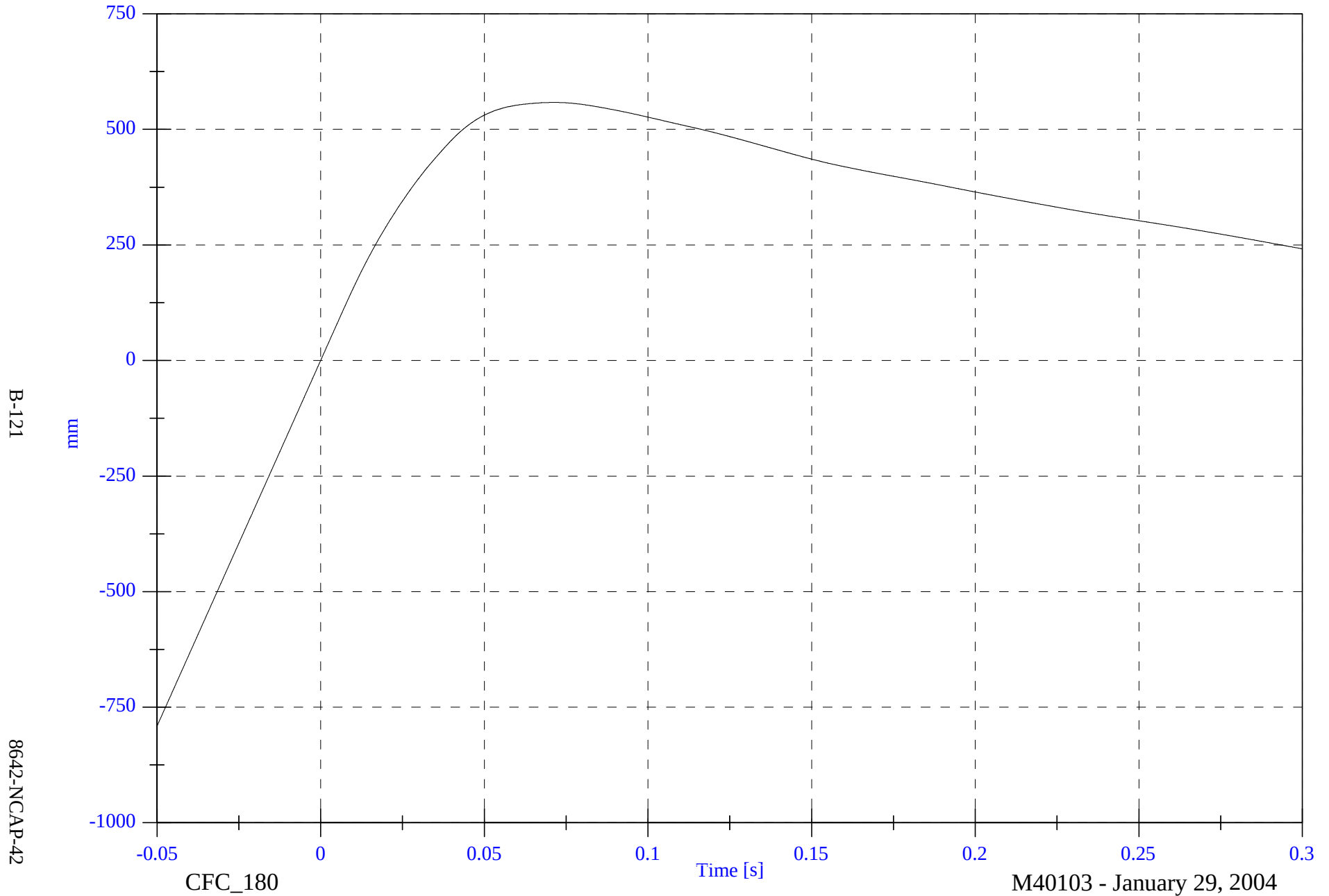


2004 NCAP Test 6 2004 Chevrolet Colorado

V1 Right Rear #2x Displacement

Max: 558.1 [mm] at 0.071 [s]

Min: -791.1 [mm] at -0.050 [s]

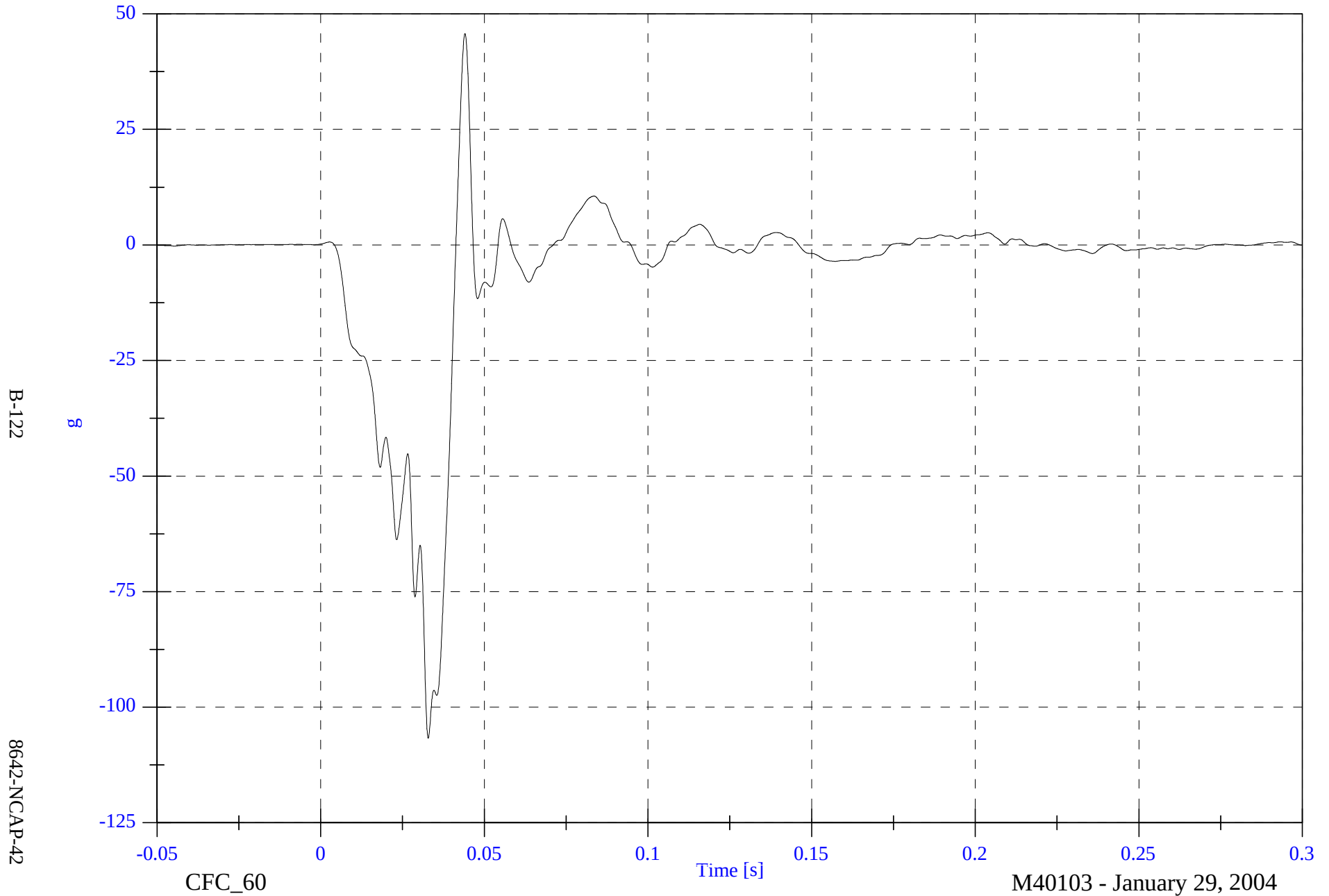


2004 NCAP Test 6 2004 Chevrolet Colorado

V1 Engine Top #3x

Max: 45.8 [g] at 0.044 [s]

Min: -106.7 [g] at 0.033 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

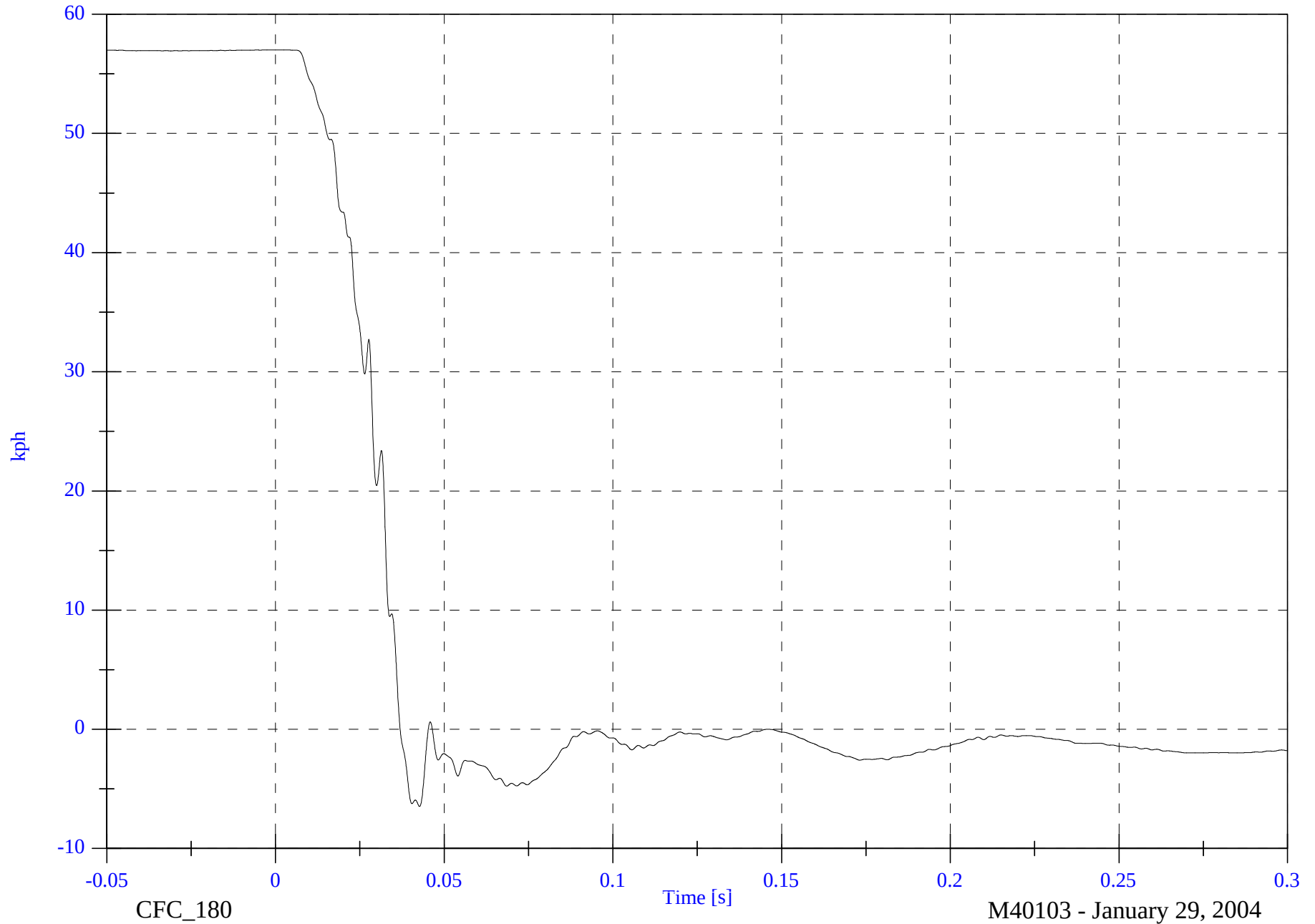
V1 Engine Top #3x Velocity

Max: 57.0 [kph] at 0.003 [s]

Min: -6.5 [kph] at 0.043 [s]

B-123

8642-NCAP-42

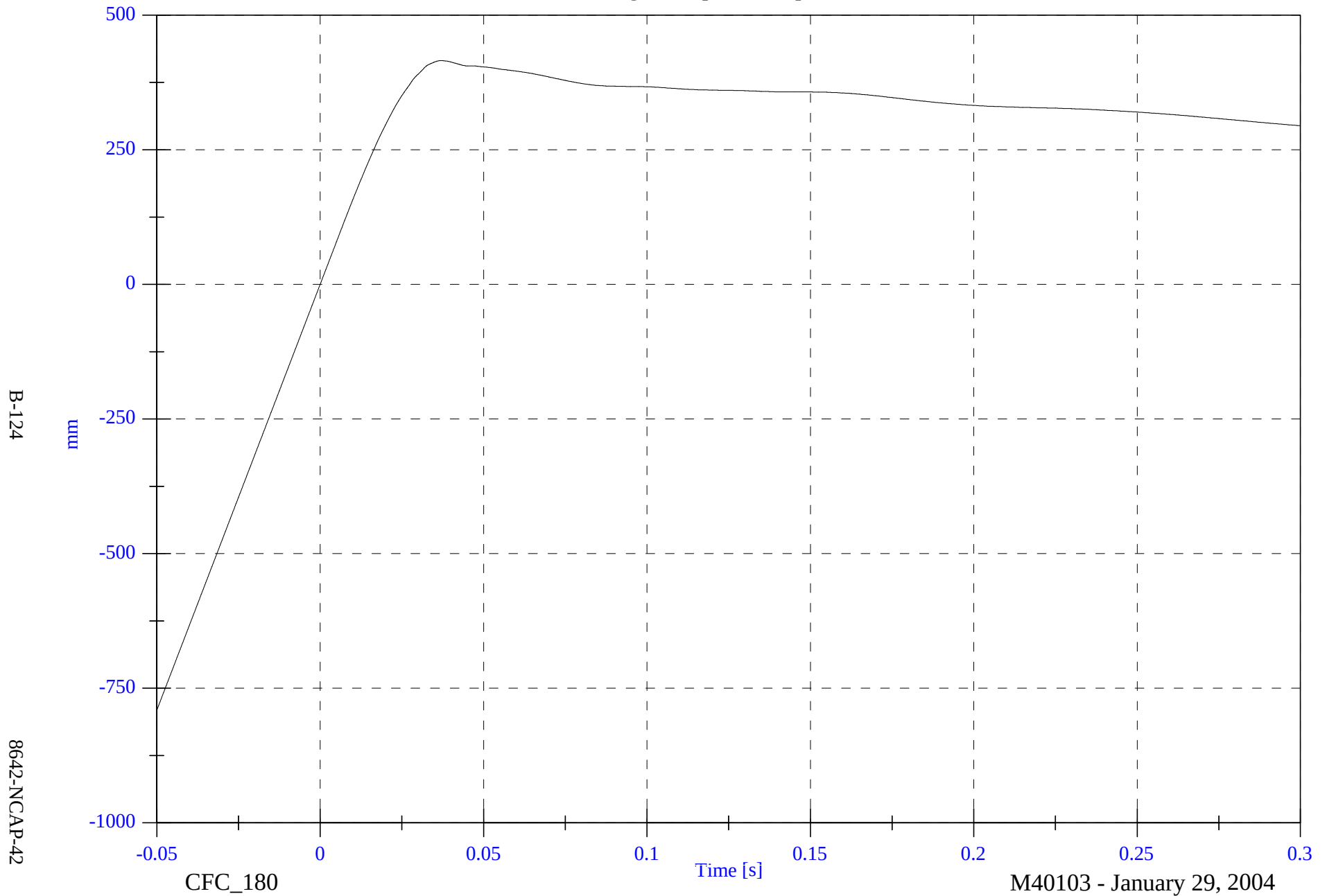


2004 NCAP Test 6 2004 Chevrolet Colorado

V1 Engine Top #3x Displacement

Max: 415.4 [mm] at 0.037 [s]

Min: -791.1 [mm] at -0.050 [s]

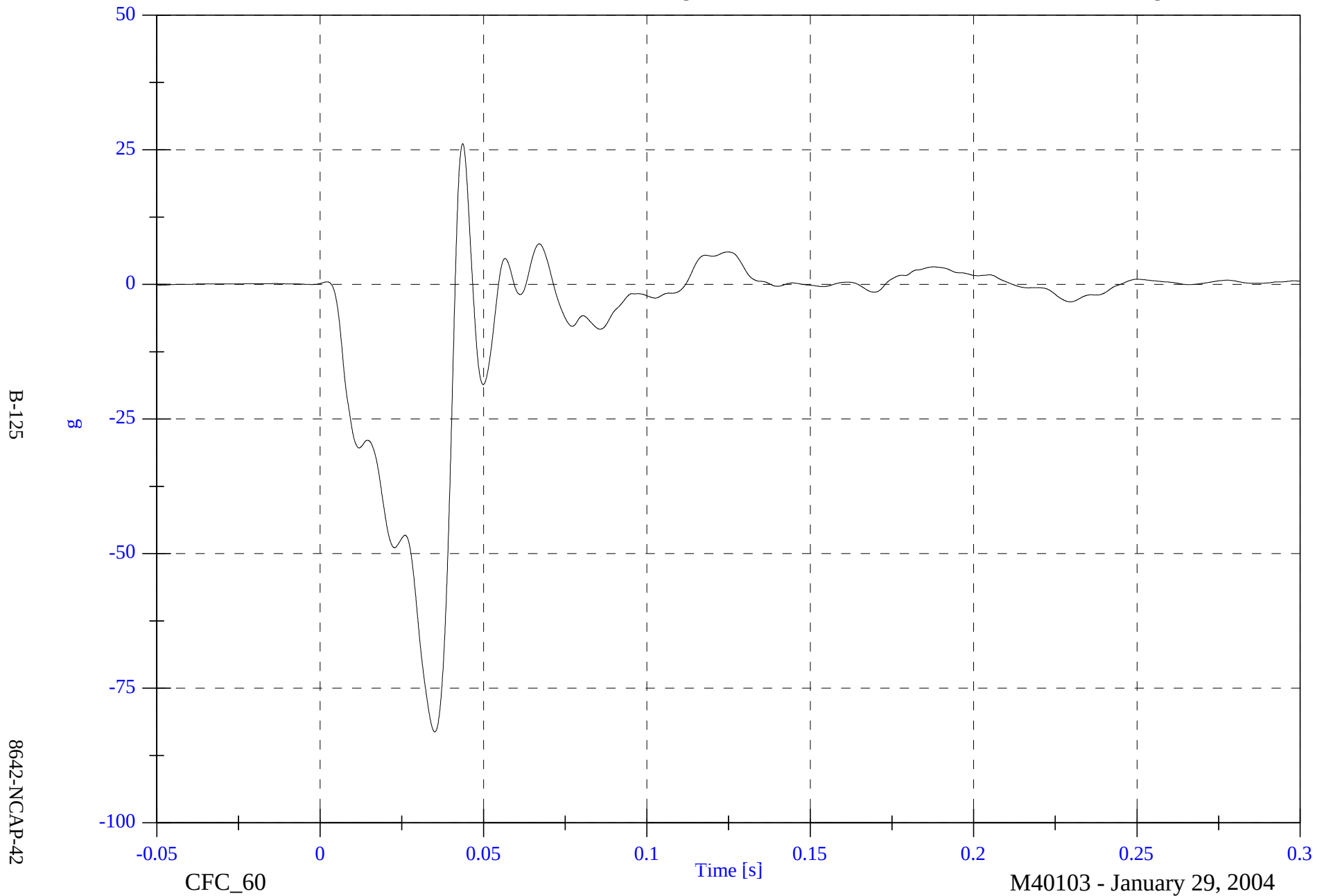


2004 NCAP Test 6 2004 Chevrolet Colorado

V1 Engine Bottom #4x

Max: 26.2 [g] at 0.044 [s]

Min: -83.1 [g] at 0.035 [s]

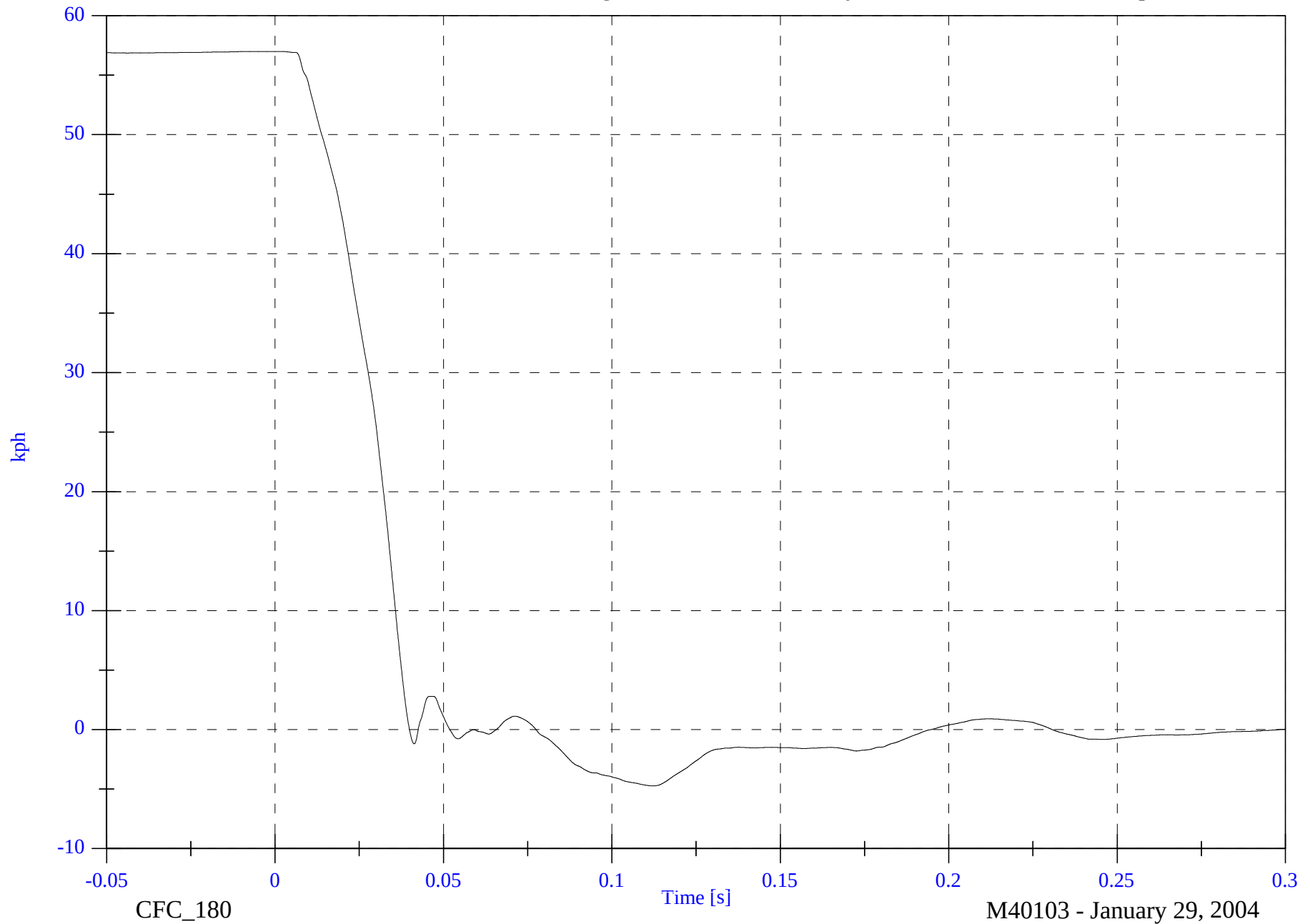


2004 NCAP Test 6 2004 Chevrolet Colorado

V1 Engine Bottom #4x Velocity

Max: 57.0 [kph] at -0.002 [s]

Min: -4.7 [kph] at 0.112 [s]



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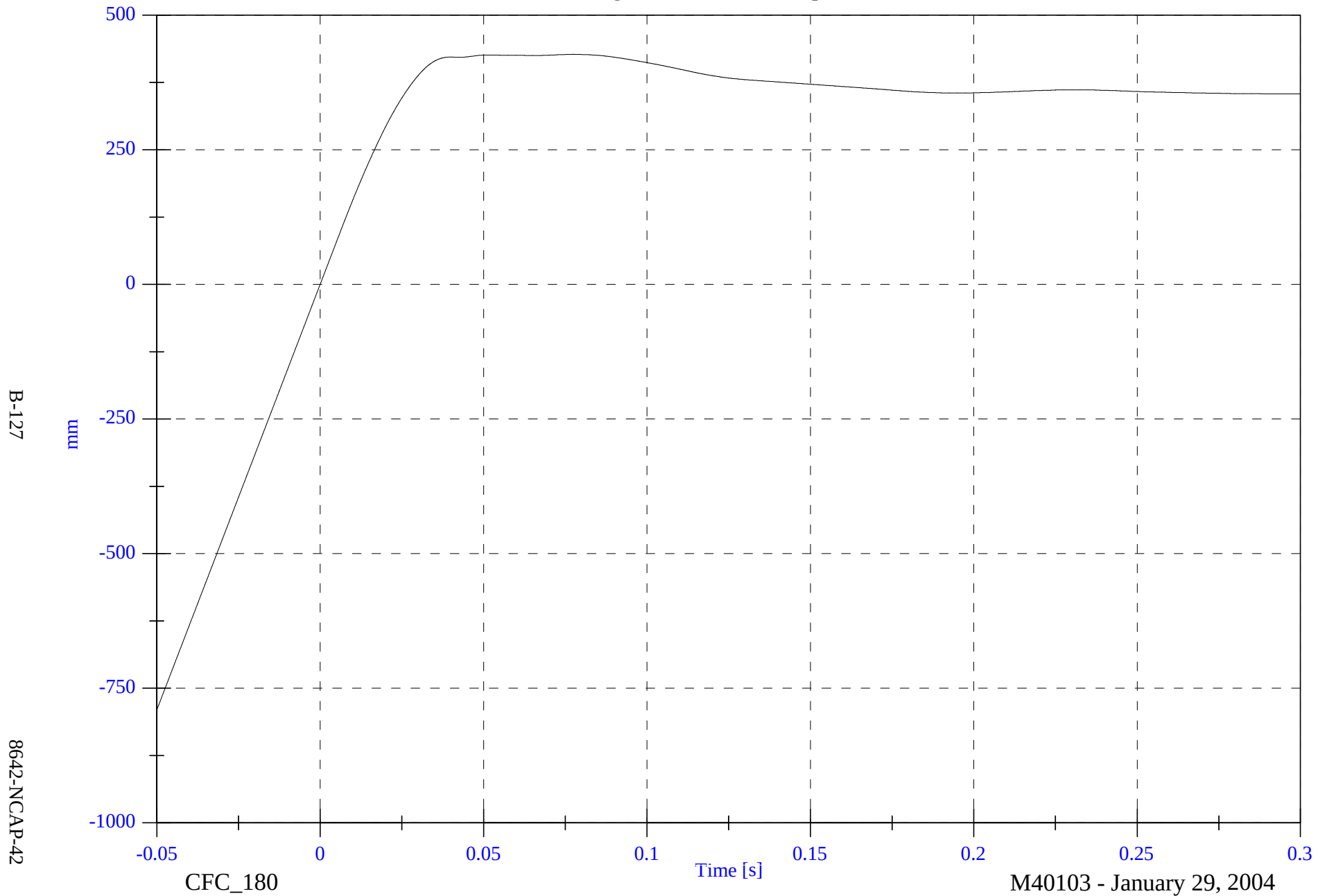
8642-NCAP-42

2004 NCAP Test 6 2004 Chevrolet Colorado

V1 Engine Bottom #4x Displacement

Max: 427.2 [mm] at 0.077 [s]

Min: -790.5 [mm] at -0.050 [s]

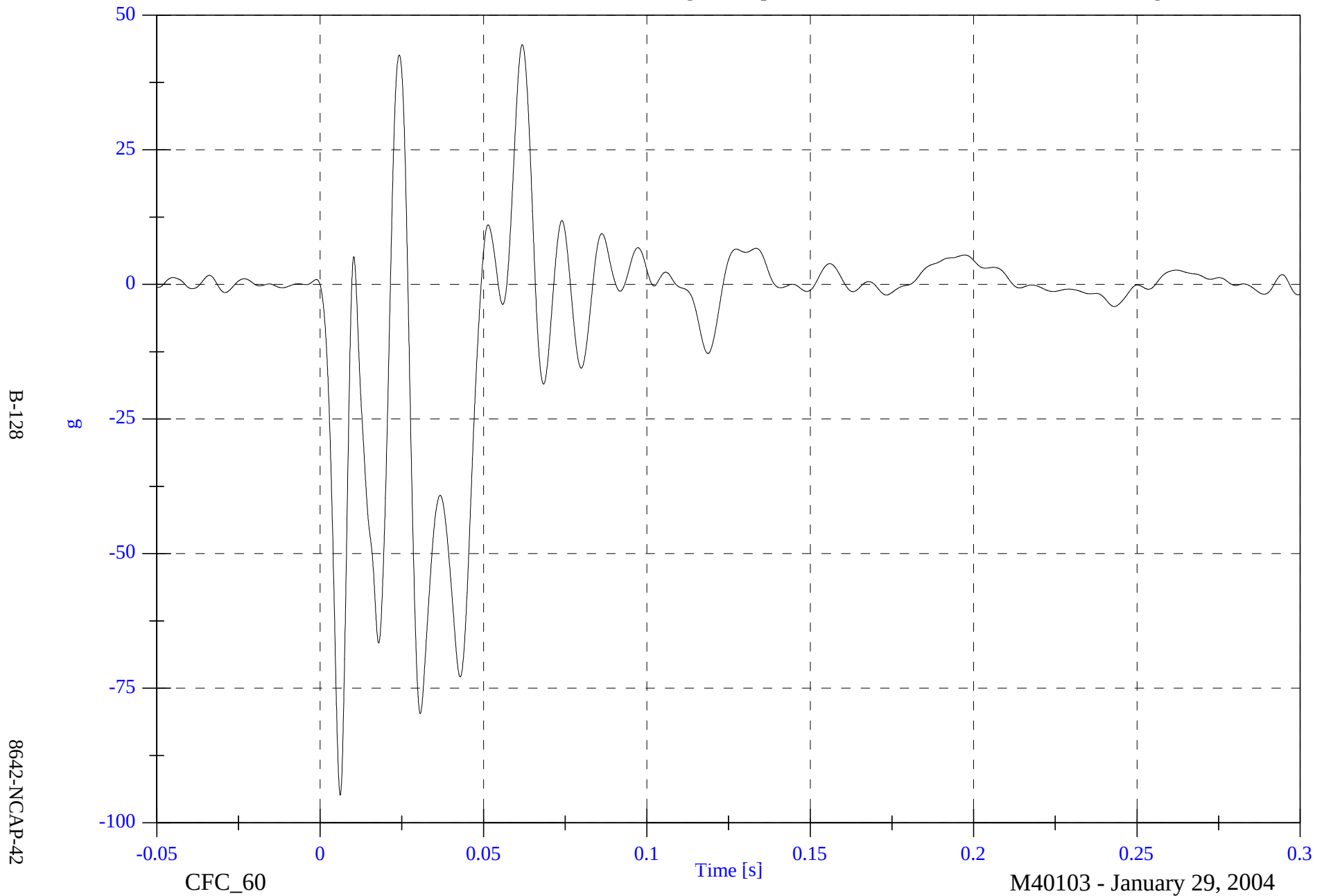


2004 NCAP Test 6 2004 Chevrolet Colorado

V1 Right Caliper #5x

Max: 44.5 [g] at 0.062 [s]

Min: -94.9 [g] at 0.006 [s]

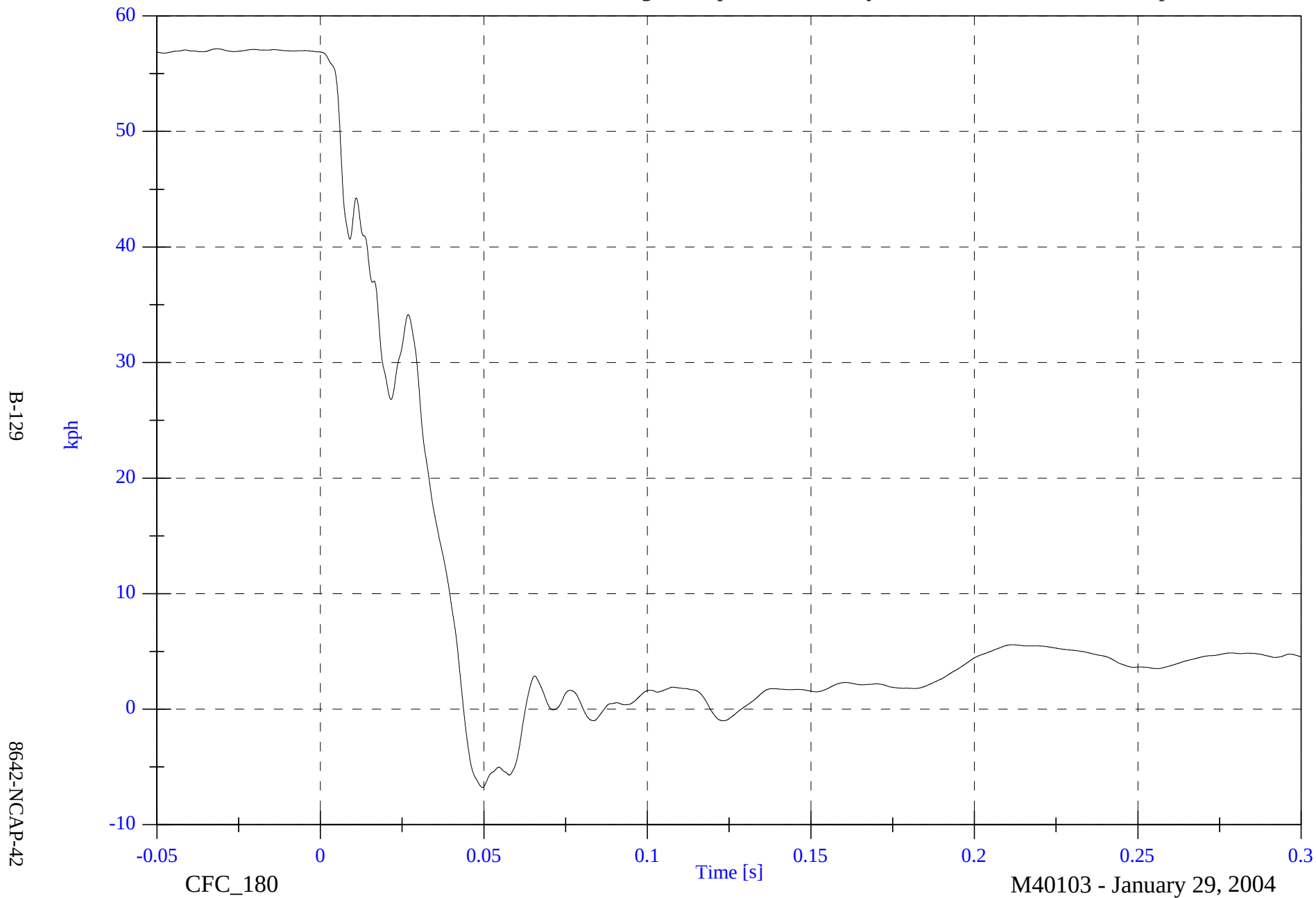


2004 NCAP Test 6 2004 Chevrolet Colorado

V1 Right Caliper #5x Velocity

Max: 57.2 [kph] at -0.032 [s]

Min: -6.8 [kph] at 0.050 [s]

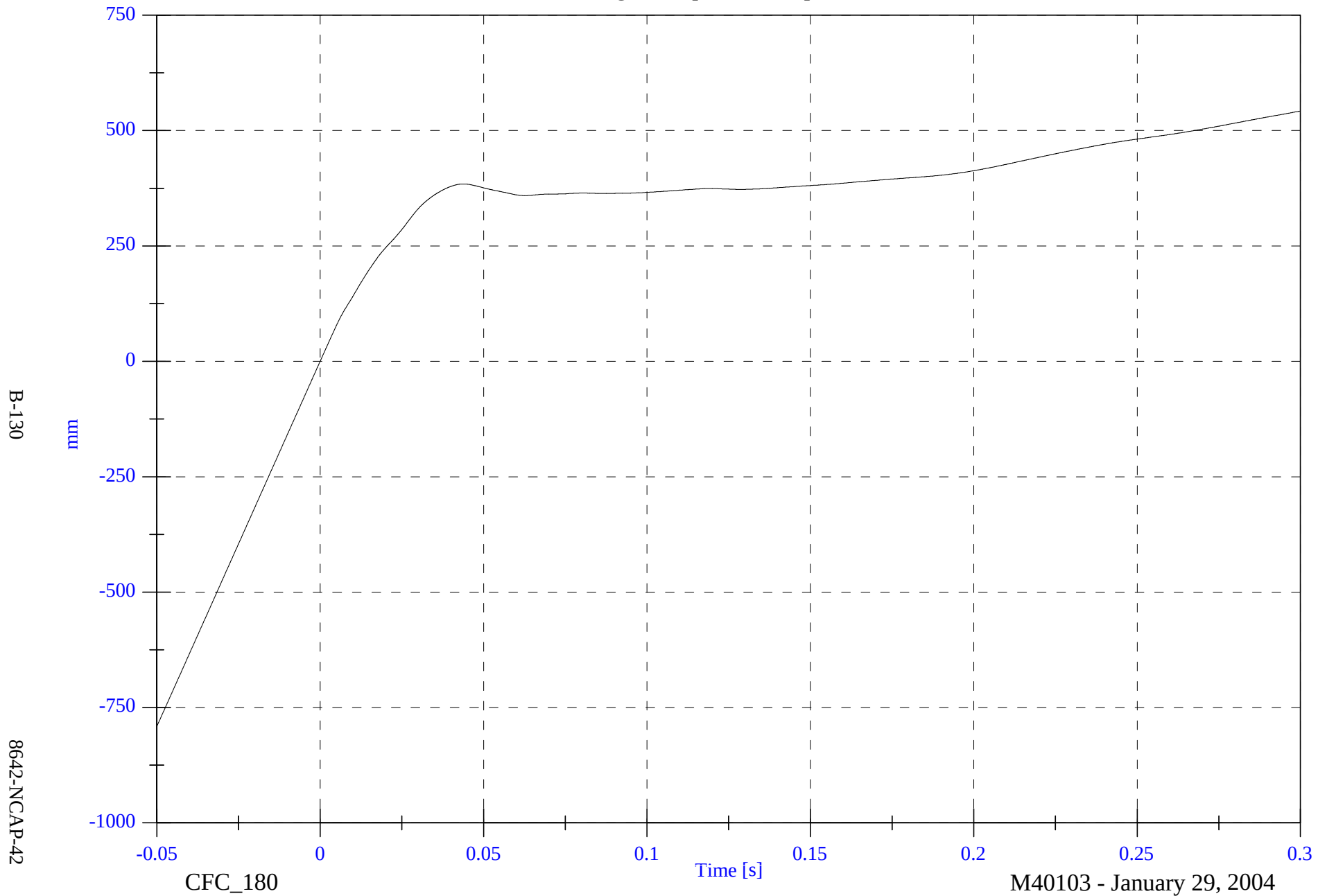


2004 NCAP Test 6 2004 Chevrolet Colorado

V1 Right Caliper #5x Displacement

Max: 542.2 [mm] at 0.300 [s]

Min: -791.4 [mm] at -0.050 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

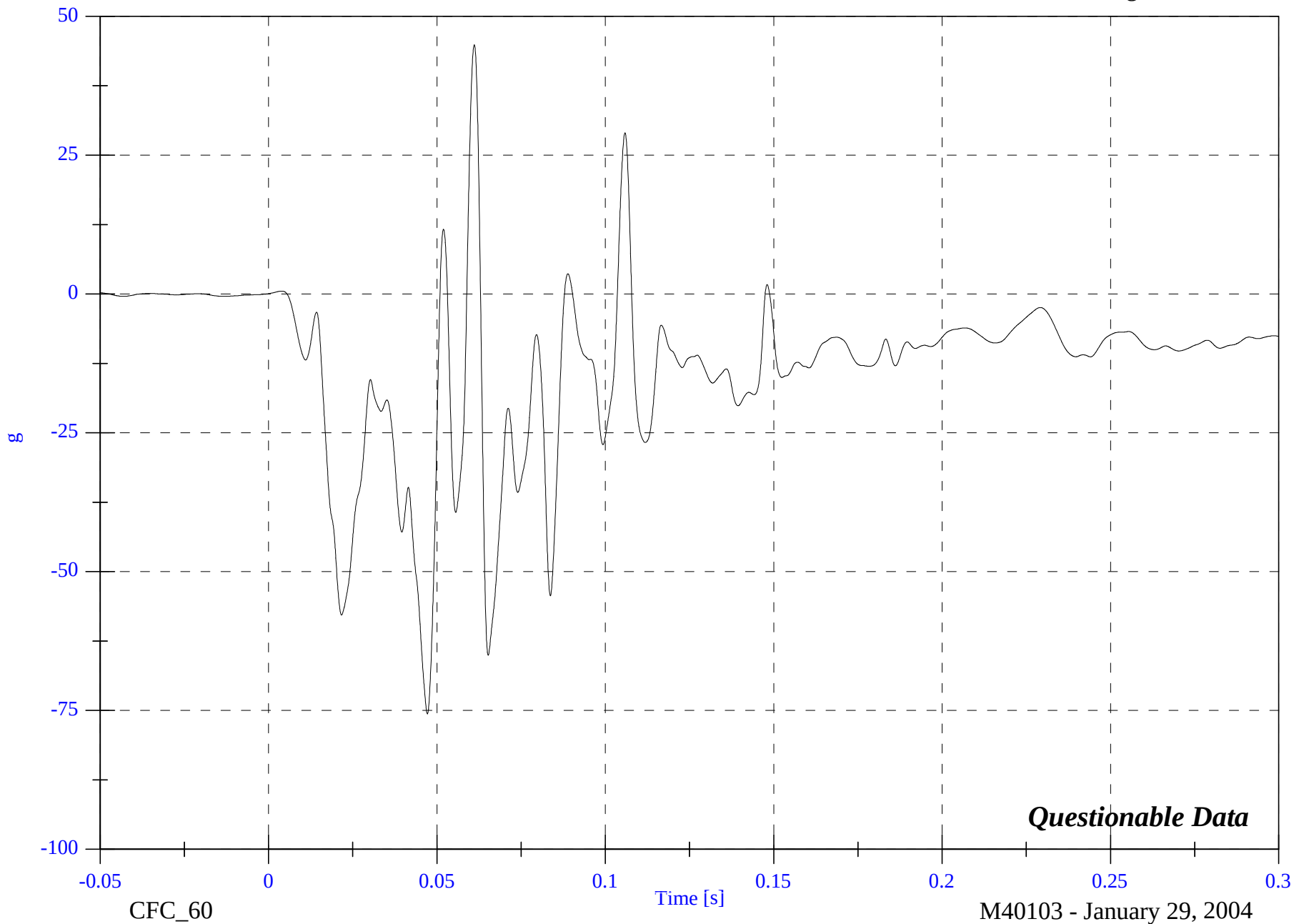
V1 Instrument Panel #6x

Max: 44.9 [g] at 0.061 [s]

Min: -75.6 [g] at 0.047 [s]

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2004 NCAP Test 6 2004 Chevrolet Colorado

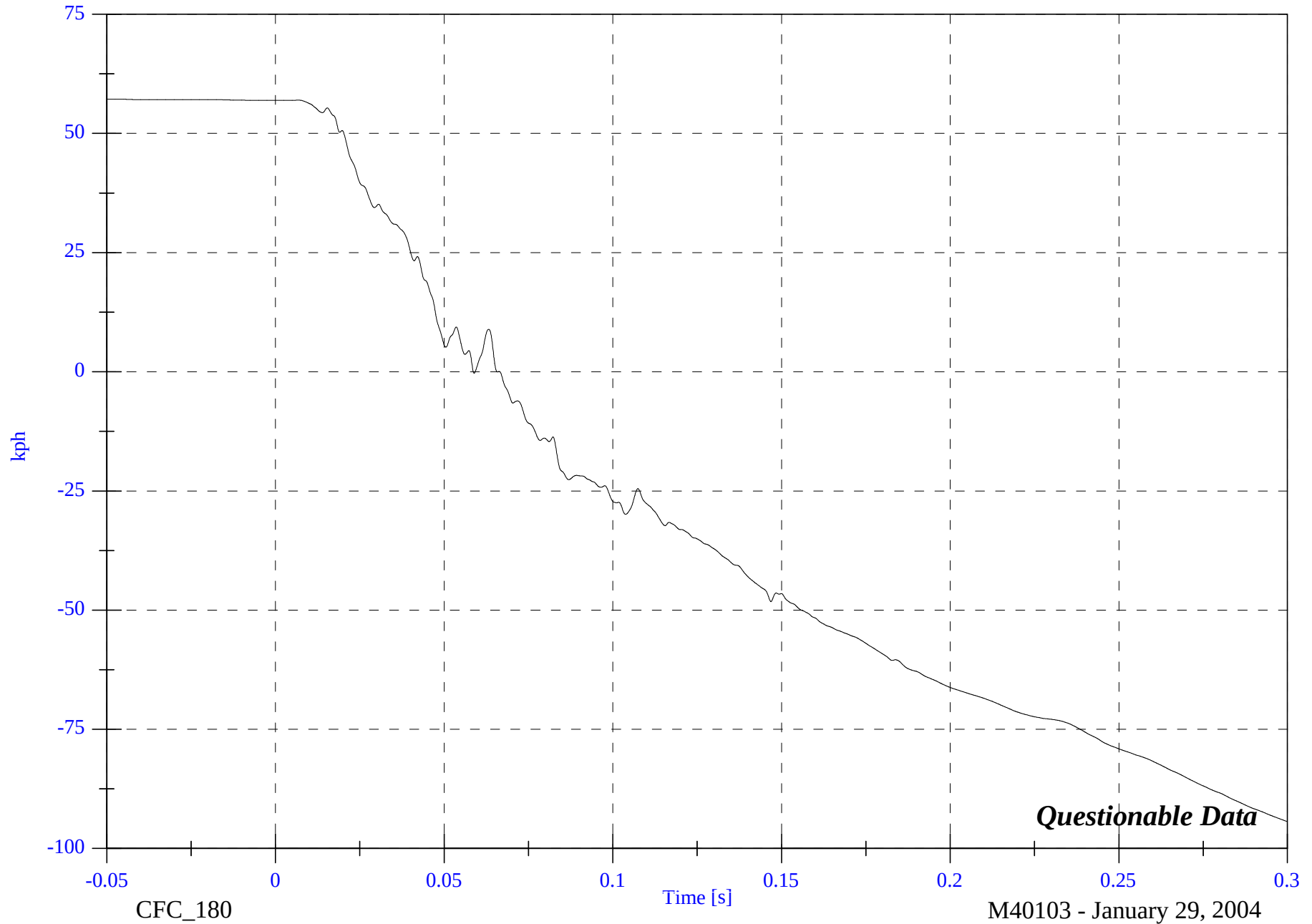
V1 Instrument Panel #6x Velocity

Max: 57.2 [kph] at -0.047 [s]

Min: -94.4 [kph] at 0.300 [s]

B-132

8642-NCAP-42

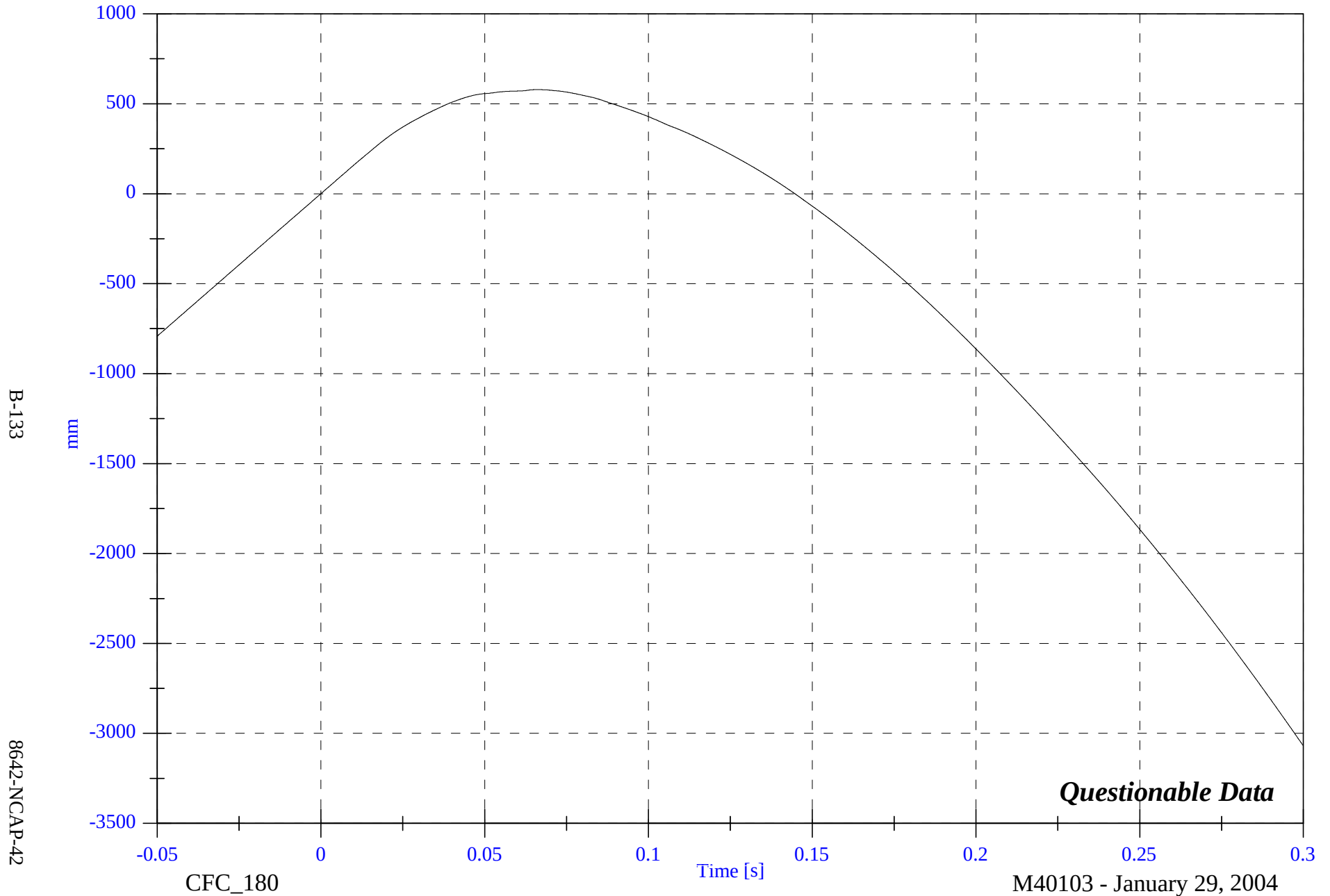


2004 NCAP Test 6 2004 Chevrolet Colorado

V1 Instrument Panel #6x Displacement

Max: 578.3 [mm] at 0.067 [s]

Min: -3068.8 [mm] at 0.300 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

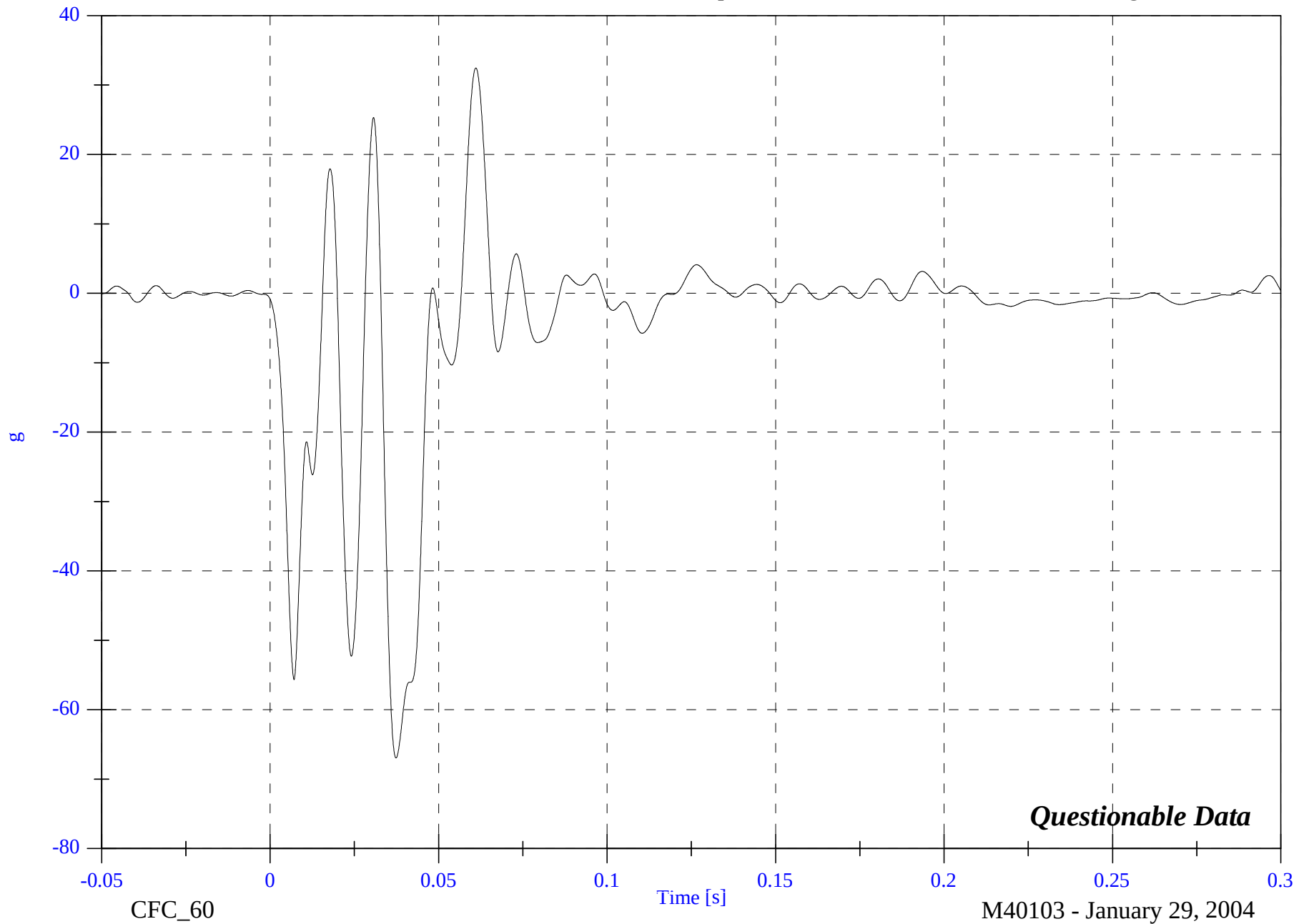
V1 Left Caliper #7x

Max: 32.5 [g] at 0.061 [s]

Min: -66.9 [g] at 0.037 [s]

B-134

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2004 NCAP Test 6 2004 Chevrolet Colorado

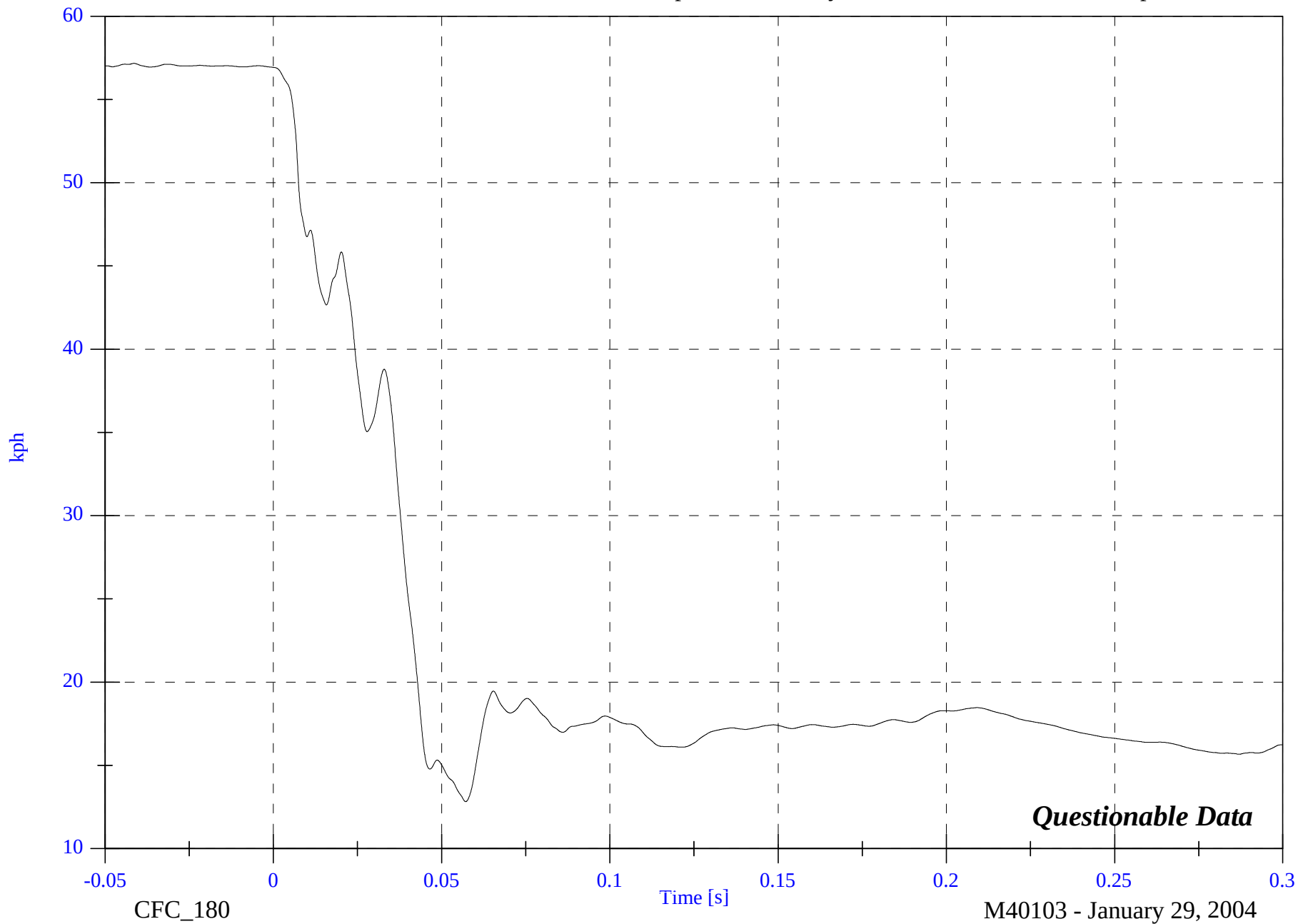
V1 Left Caliper #7x Velocity

Max: 57.2 [kph] at -0.041 [s]

Min: 12.8 [kph] at 0.057 [s]

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2004 NCAP Test 6 2004 Chevrolet Colorado

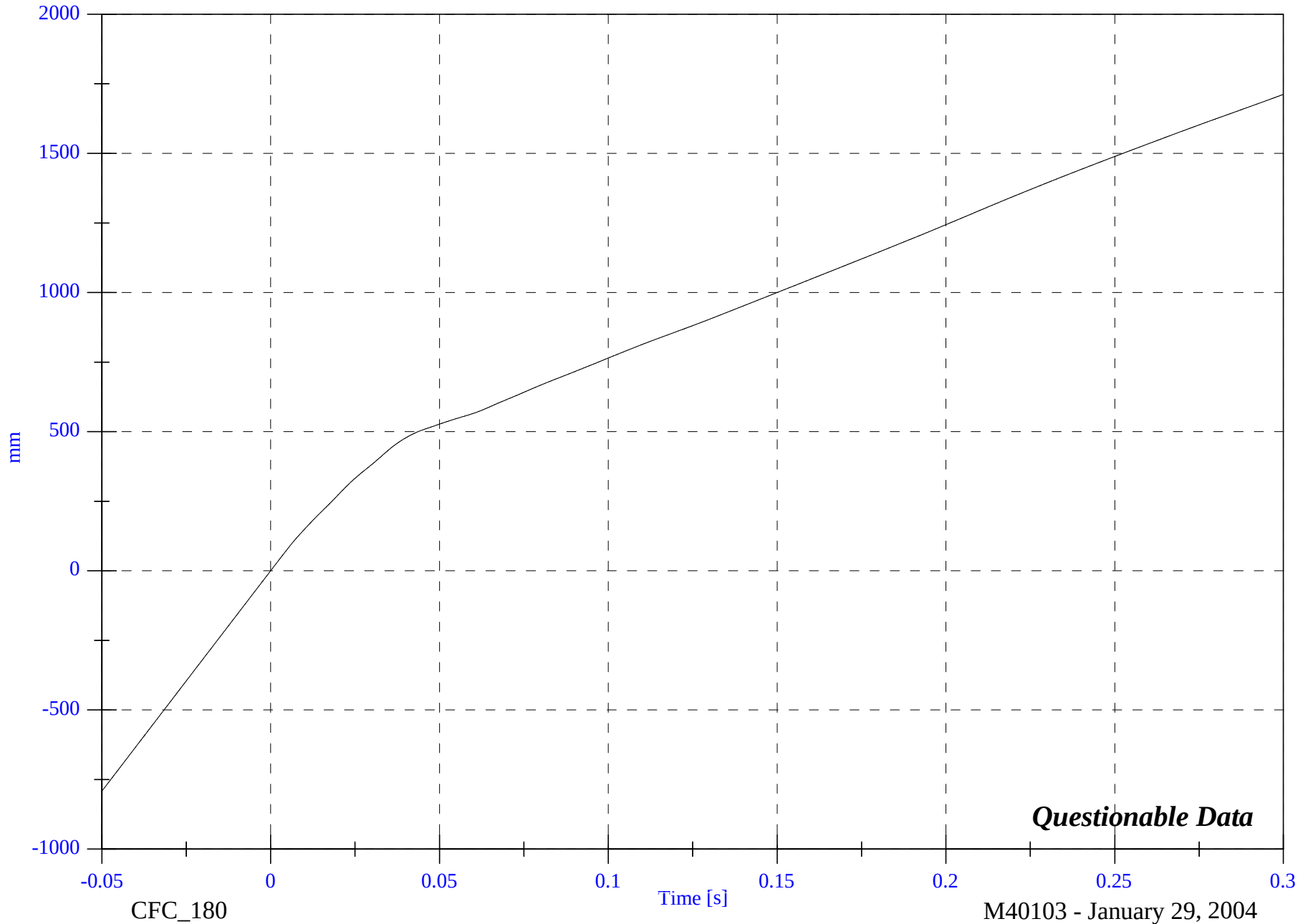
V1 Left Caliper #7x Displacement

Max: 1711.9 [mm] at 0.300 [s]

Min: -792.1 [mm] at -0.050 [s]

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8642-NCAP-42



Questionable Data

CFC_180

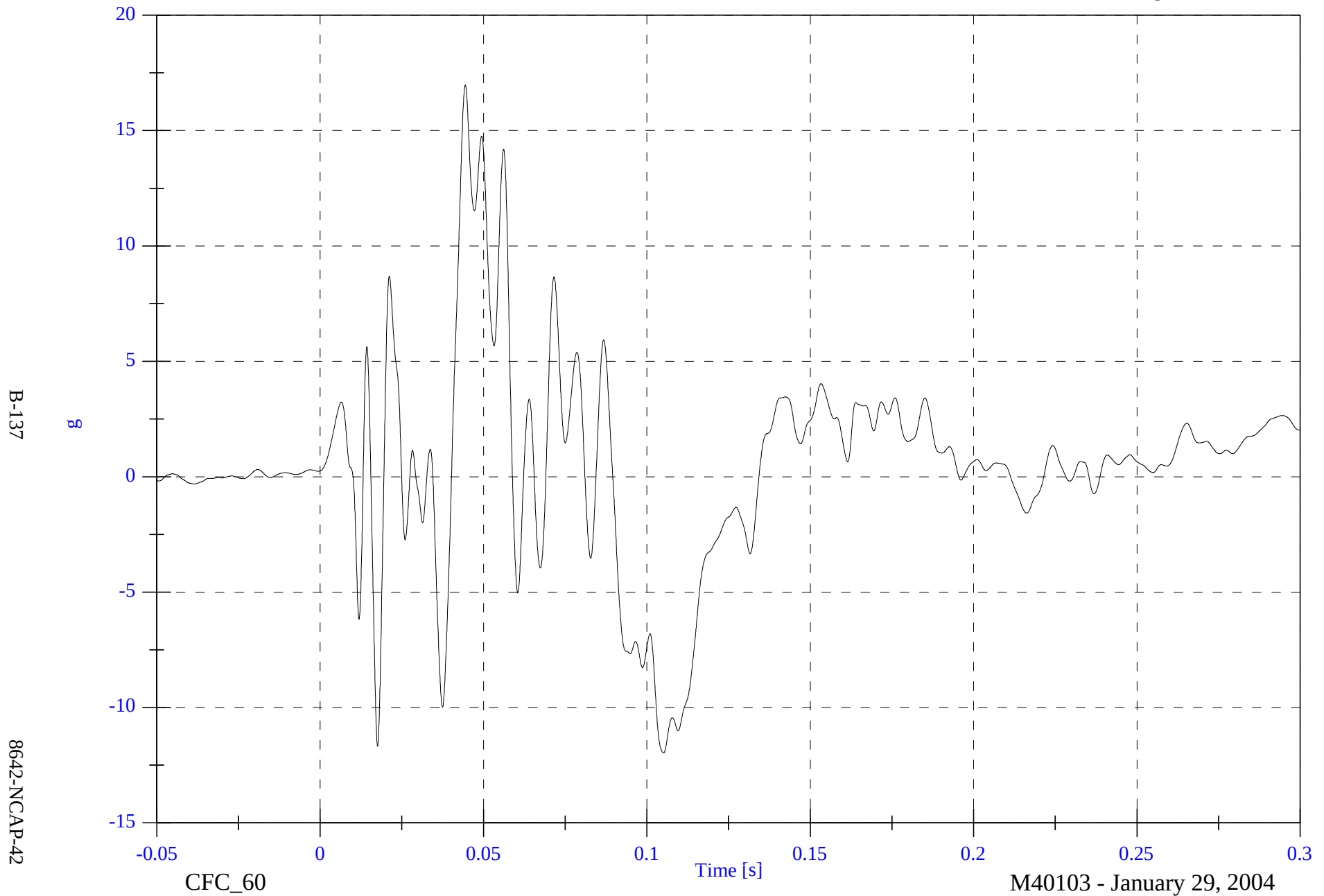
M40103 - January 29, 2004

2004 NCAP Test 6 2004 Chevrolet Colorado

V1 Left Rear #8z

Max: 17.0 [g] at 0.044 [s]

Min: -12.0 [g] at 0.105 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

Max: 8.0 [kph] at 0.088 [s]

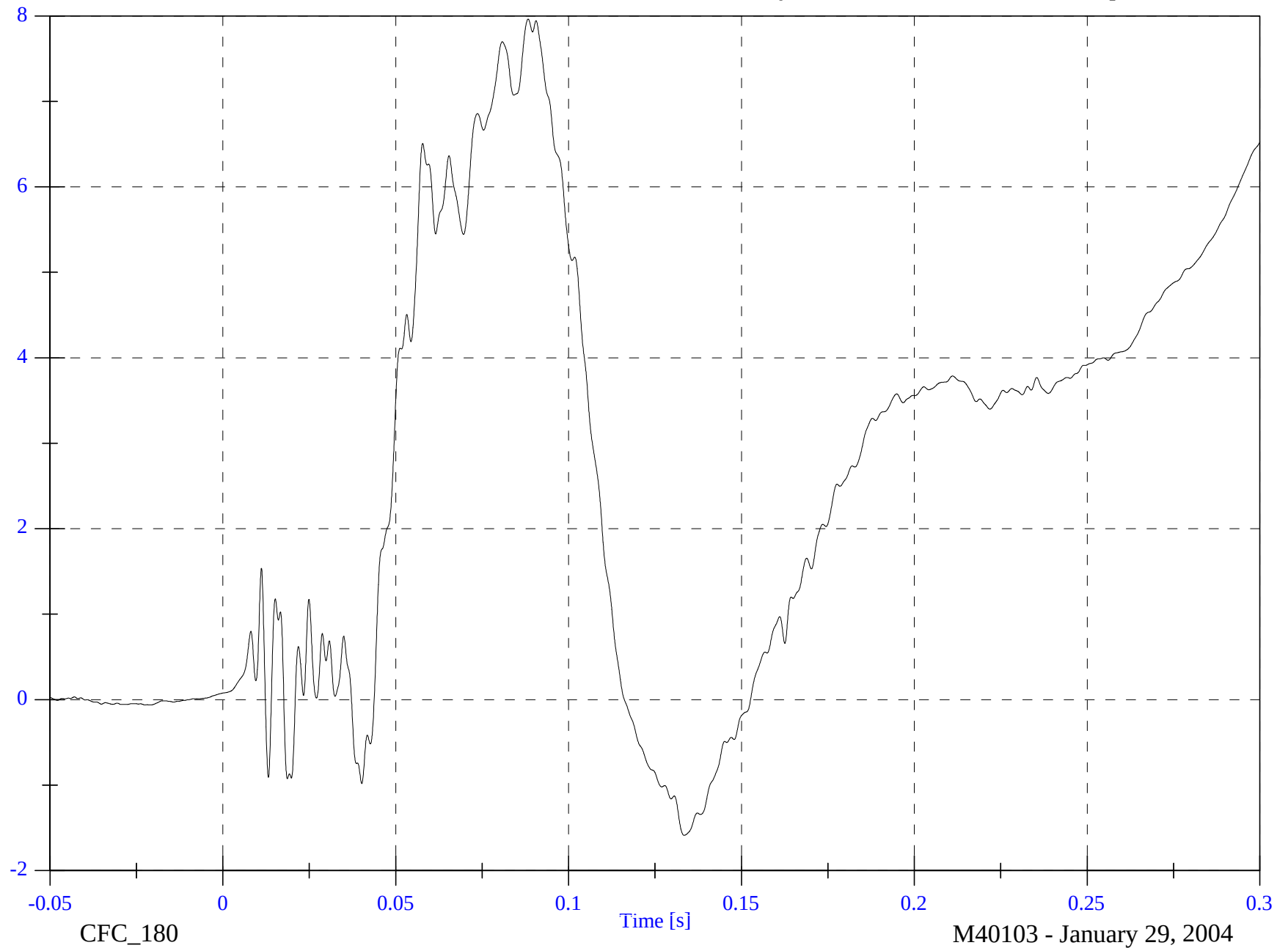
Min: -1.6 [kph] at 0.133 [s]

V1 Left Rear #8z Velocity

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kph



-0.05

0

0.05

0.1

Time [s]

0.15

0.2

0.25

0.3

CFC_180

M40103 - January 29, 2004

2004 NCAP Test 6 2004 Chevrolet Colorado

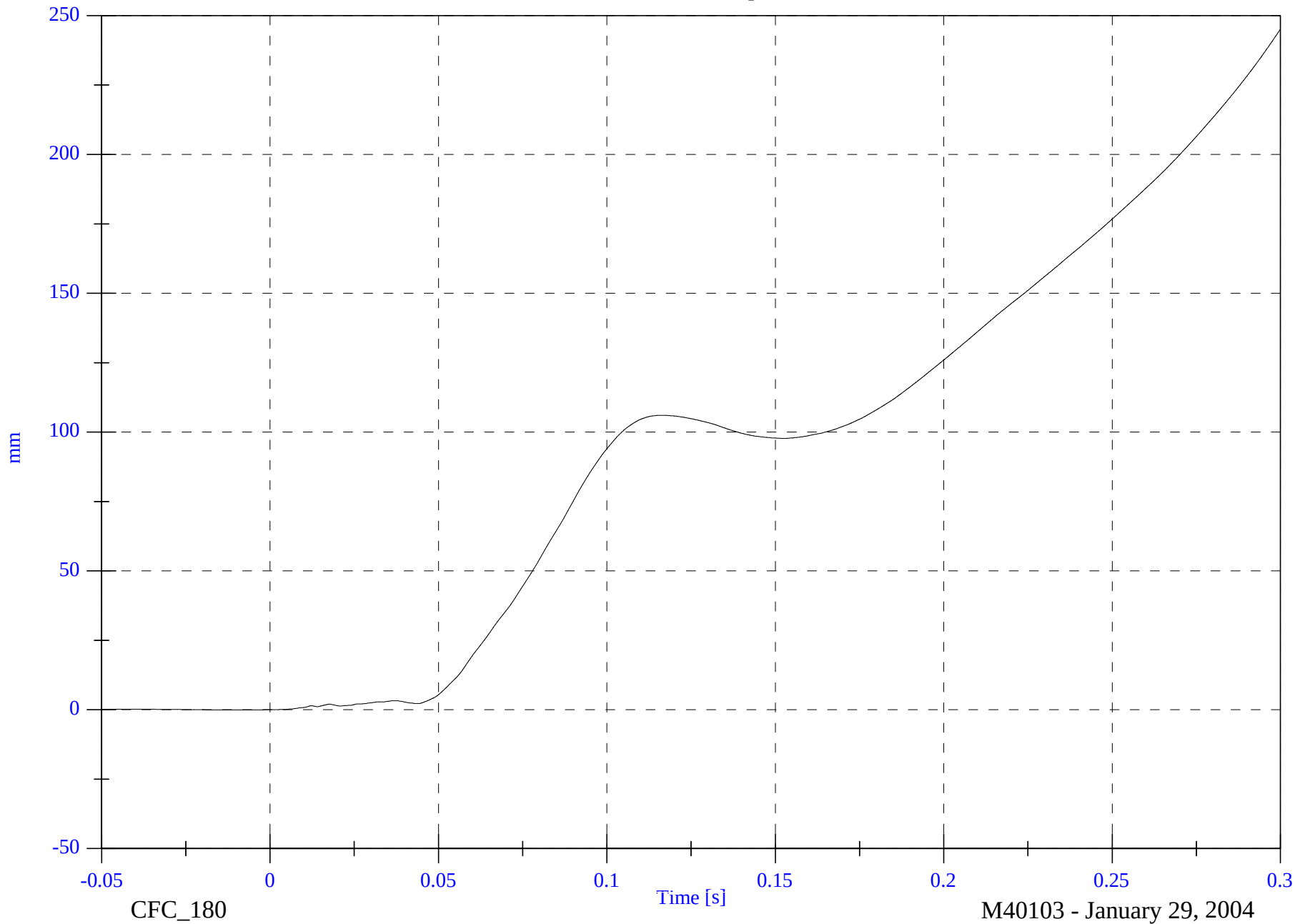
V1 Left Rear #8z Displacement

Max: 245.1 [mm] at 0.300 [s]

Min: -0.1 [mm] at -0.010 [s]

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2004 NCAP Test 6 2004 Chevrolet Colorado

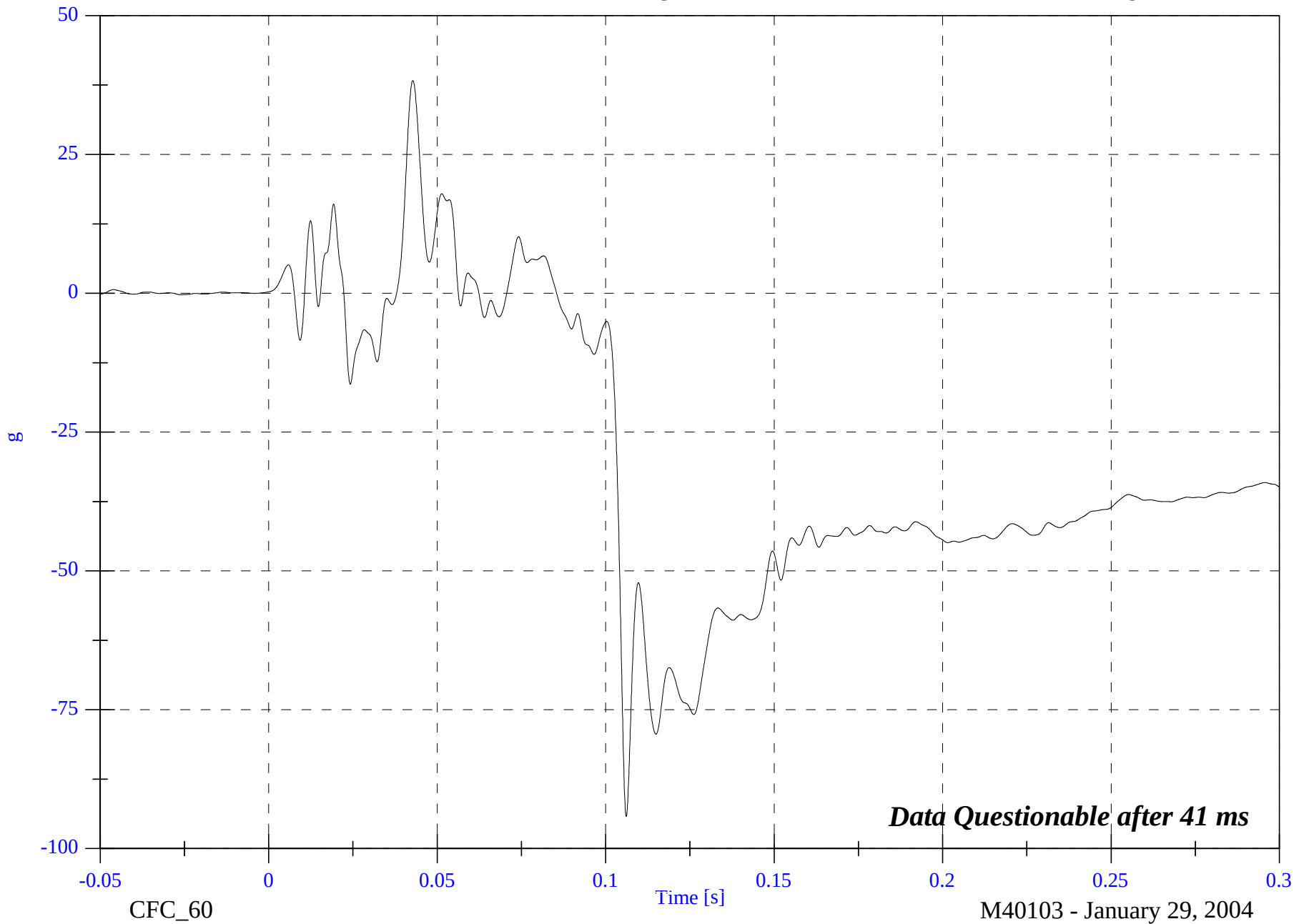
V1 Right Rear #9z

Max: 38.3 [g] at 0.043 [s]

Min: -94.2 [g] at 0.106 [s]

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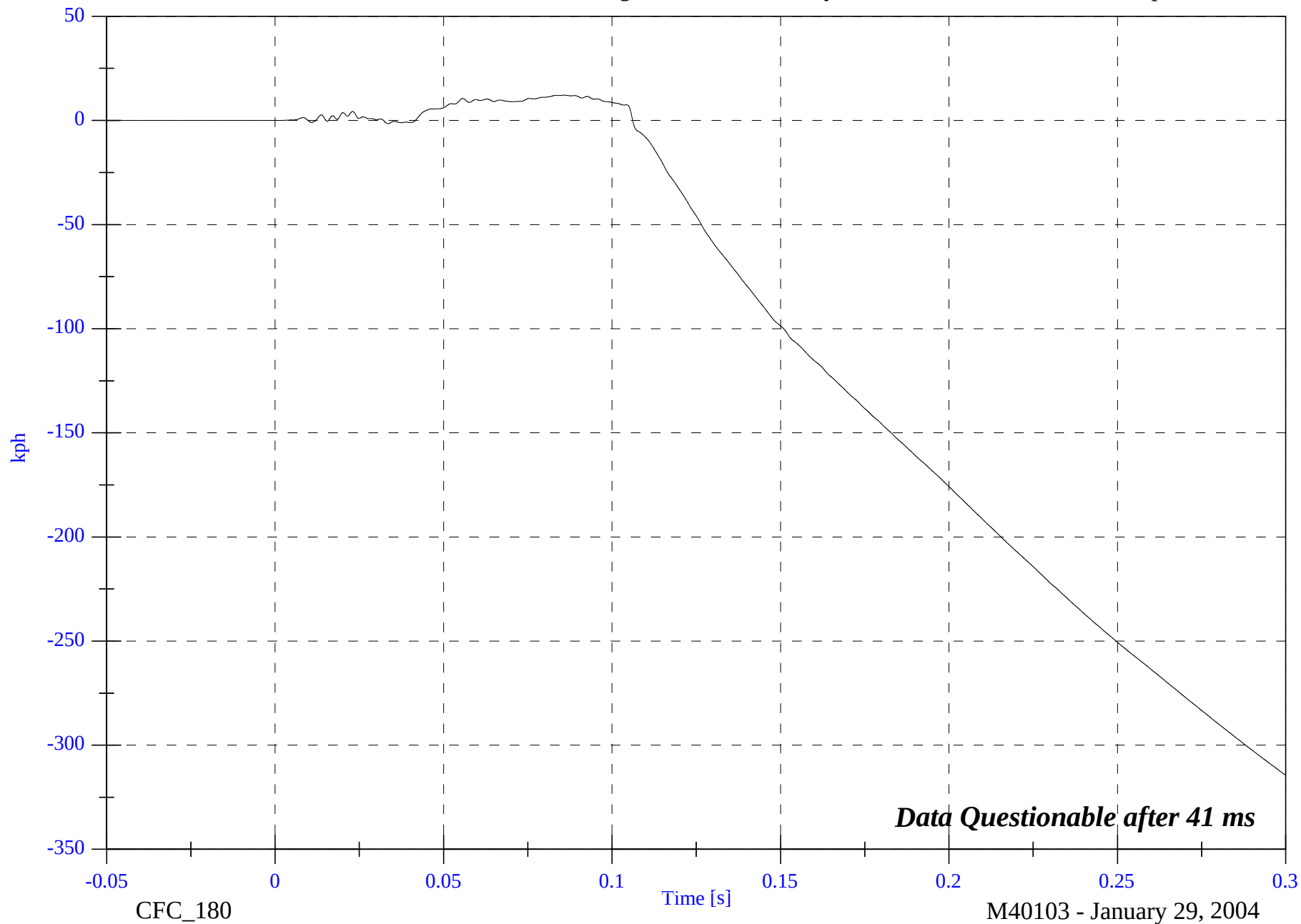


2004 NCAP Test 6 2004 Chevrolet Colorado

V1 Right Rear #9z Velocity

Max: 12.2 [kph] at 0.086 [s]

Min: -314.5 [kph] at 0.300 [s]



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CFC_180

Time [s]

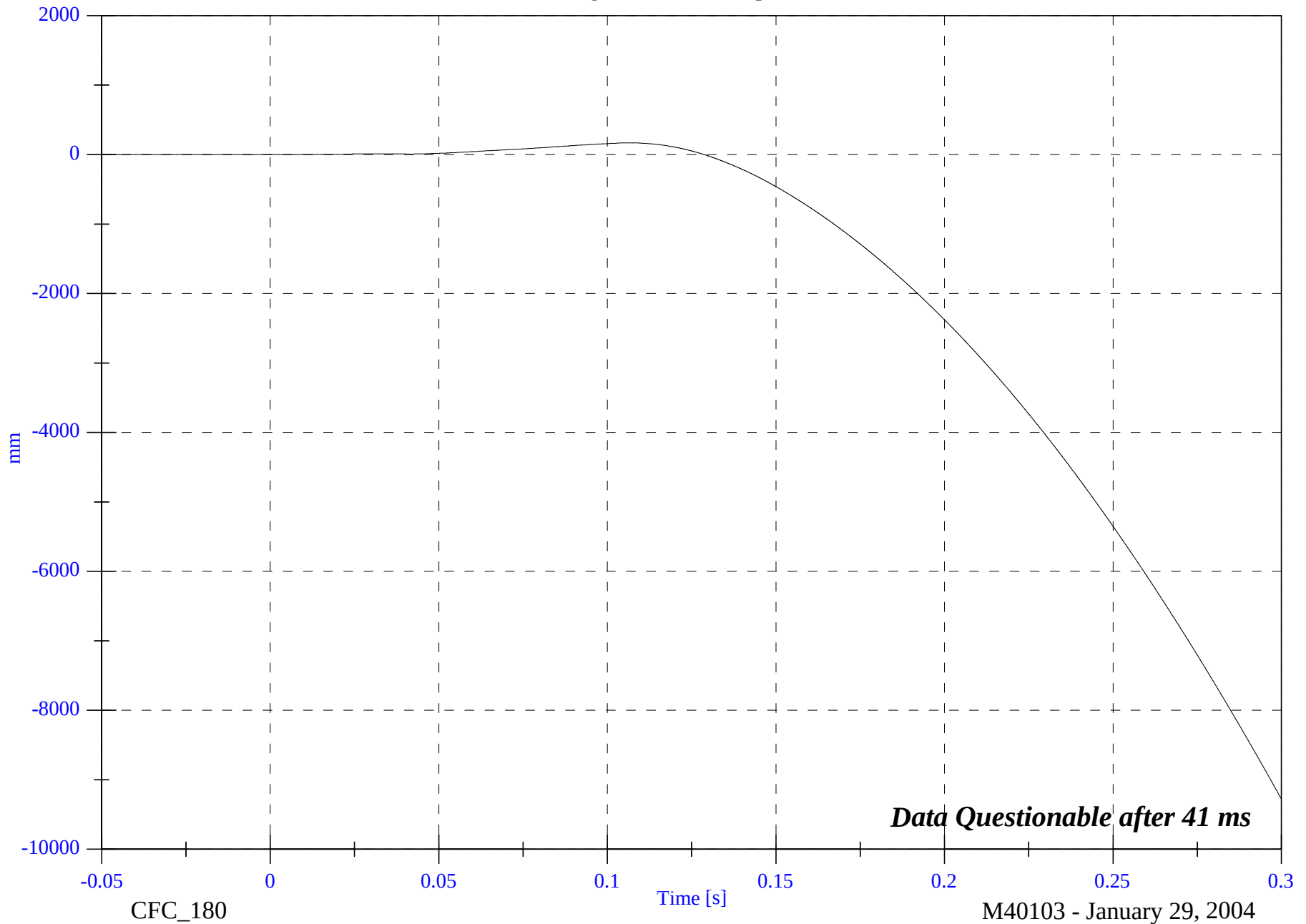
M40103 - January 29, 2004

2004 NCAP Test 6 2004 Chevrolet Colorado

V1 Right Rear #9z Displacement

Max: 169.8 [mm] at 0.106 [s]

Min: -9277.0 [mm] at 0.300 [s]



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CFC_180

Time [s]

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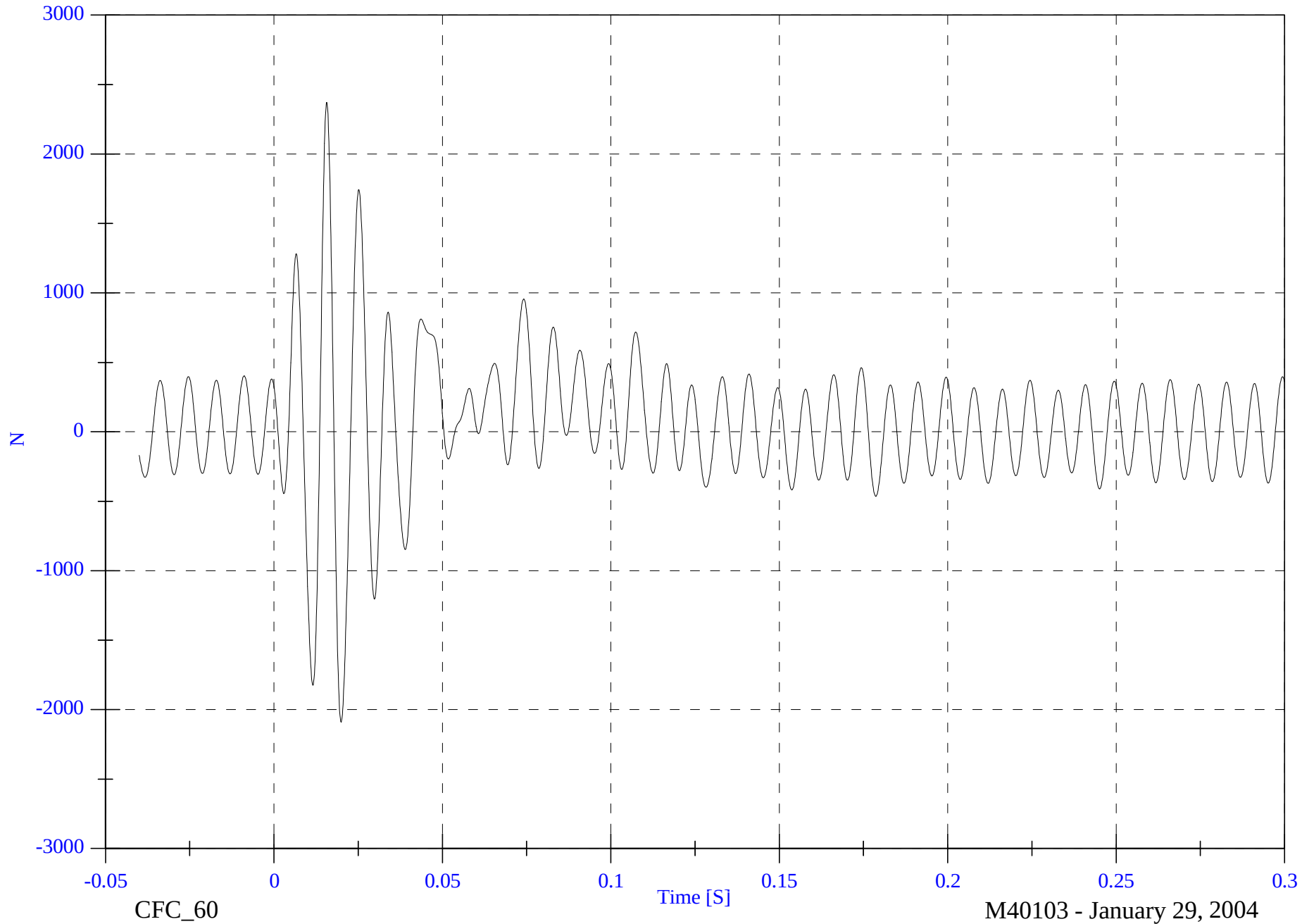
Barrier Load Cell A1 Fx

Max: 2371.2 [N] at 0.016 [S]

Min: -2090.2 [N] at 0.020 [S]

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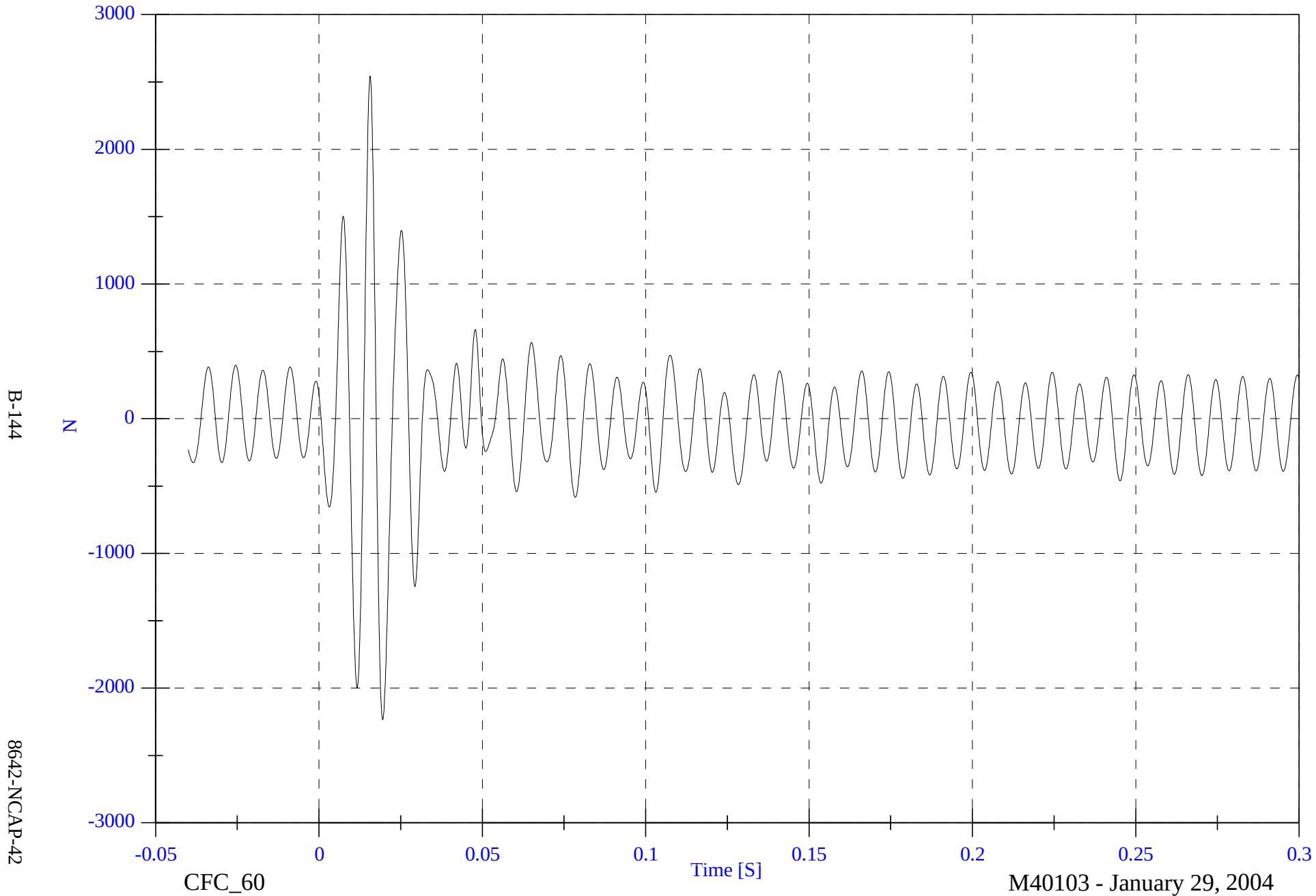


2004 NCAP Test 6 2004 Chevrolet Colorado

Barrier Load Cell A2 Fx

Max: 2543.5 [N] at 0.016 [S]

Min: -2235.4 [N] at 0.019 [S]

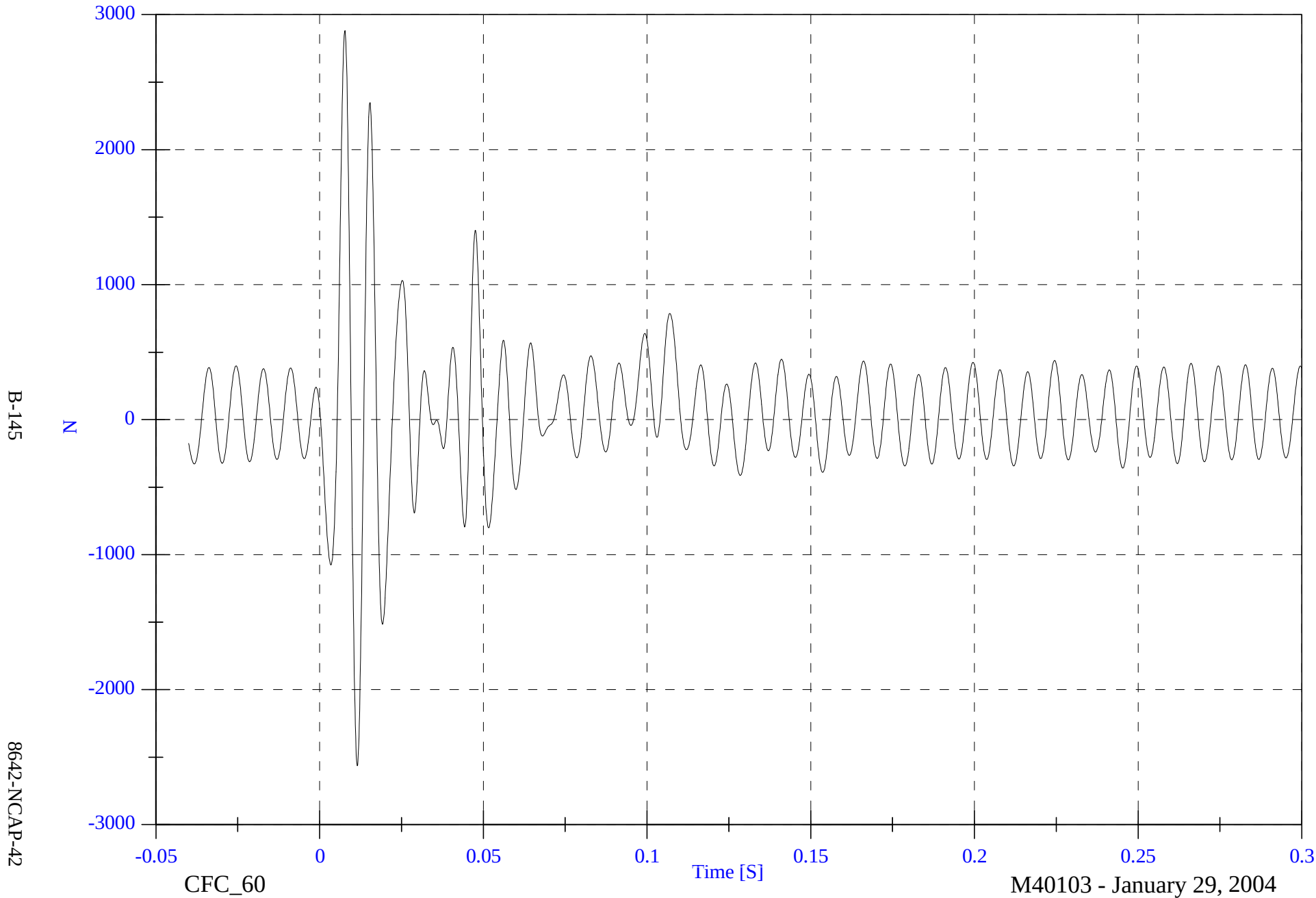


2004 NCAP Test 6 2004 Chevrolet Colorado

Barrier Load Cell A3 Fx

Max: 2882.9 [N] at 0.008 [S]

Min: -2564.1 [N] at 0.011 [S]



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CFC_60

Time [S]

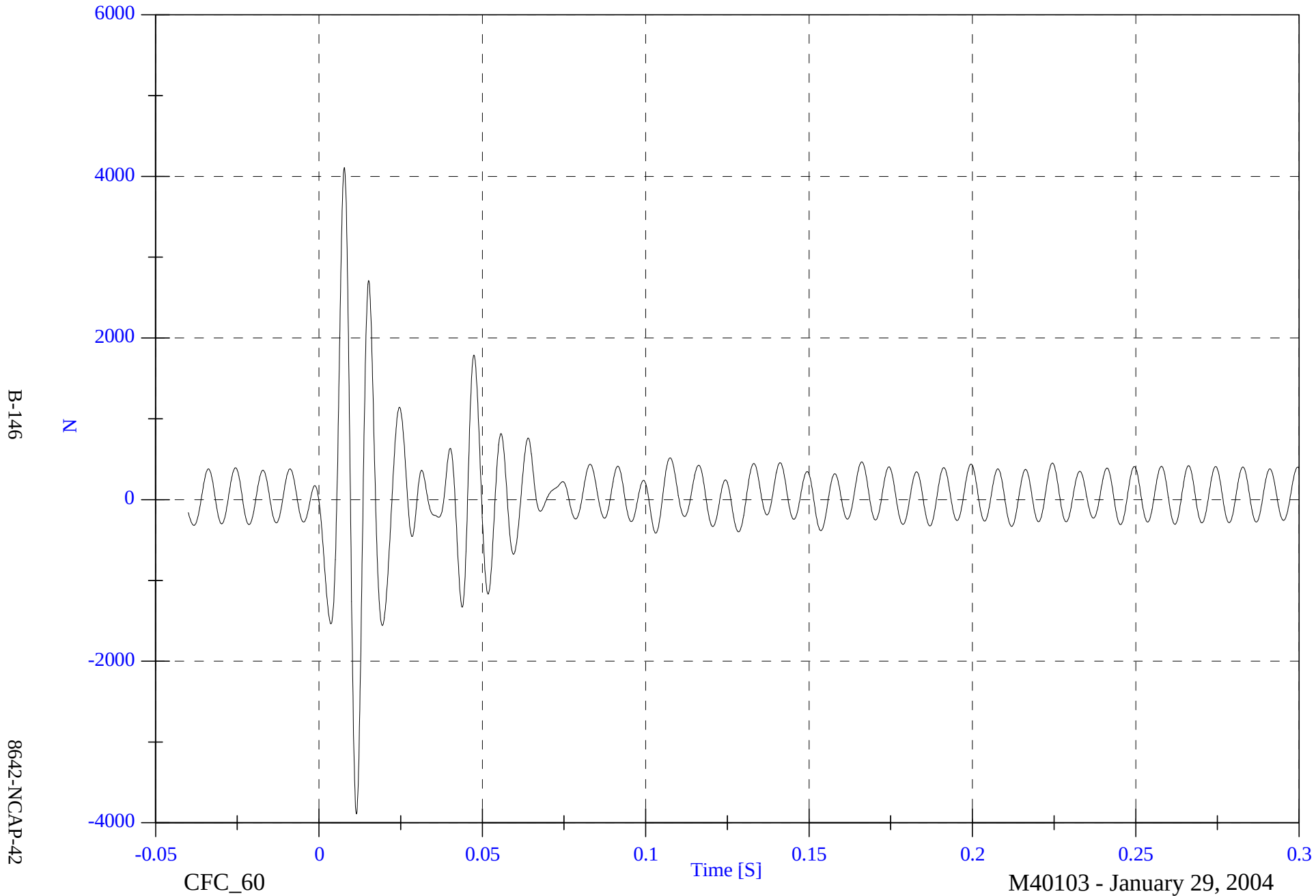
M40103 - January 29, 2004

2004 NCAP Test 6 2004 Chevrolet Colorado

Barrier Load Cell A4 Fx

Max: 4110.5 [N] at 0.008 [S]

Min: -3891.5 [N] at 0.011 [S]

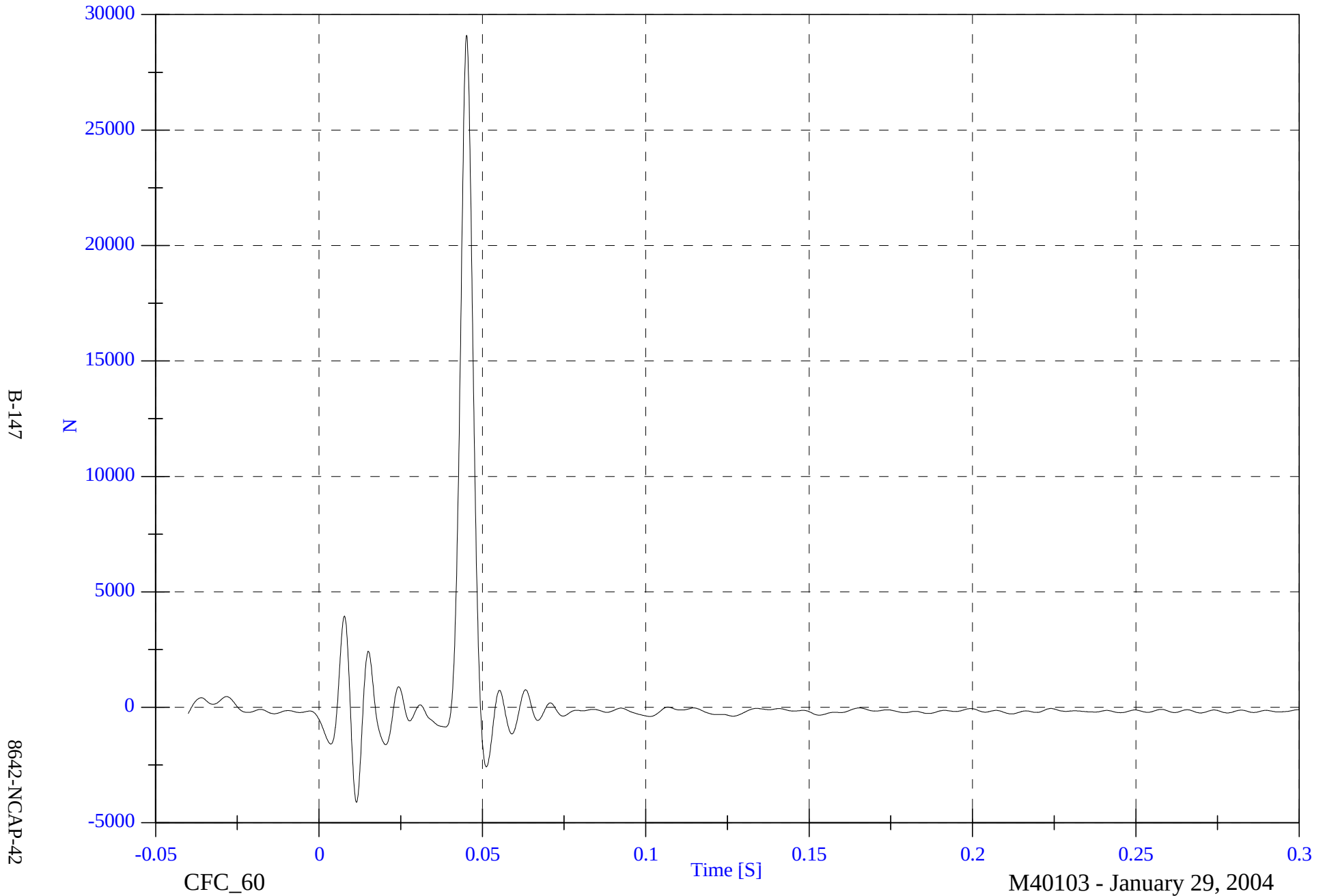


2004 NCAP Test 6 2004 Chevrolet Colorado

Barrier Load Cell A5 Fx

Max: 29111.8 [N] at 0.045 [S]

Min: -4110.8 [N] at 0.011 [S]



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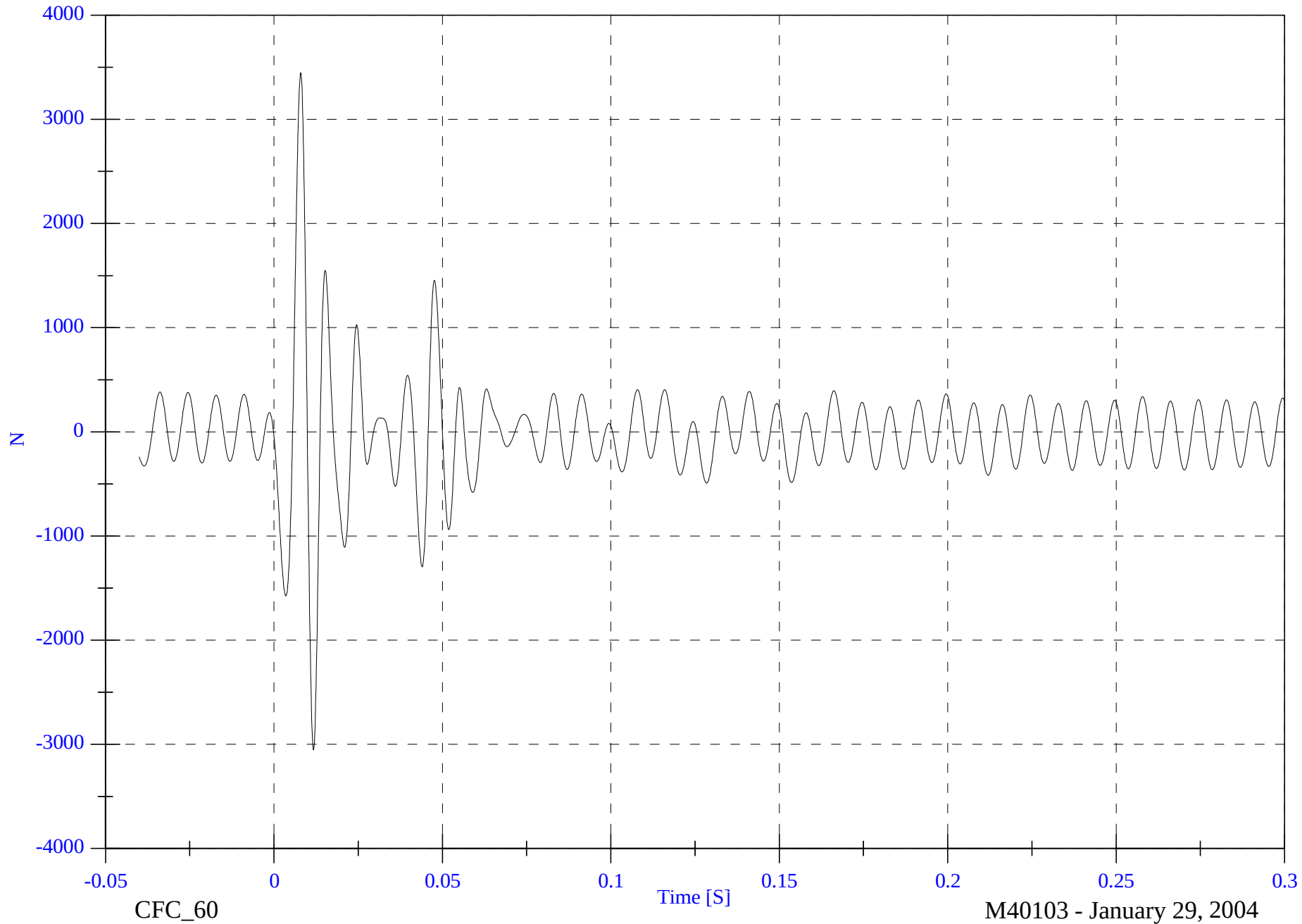
Barrier Load Cell A6 Fx

Max: 3447.4 [N] at 0.008 [S]

Min: -3053.5 [N] at 0.012 [S]

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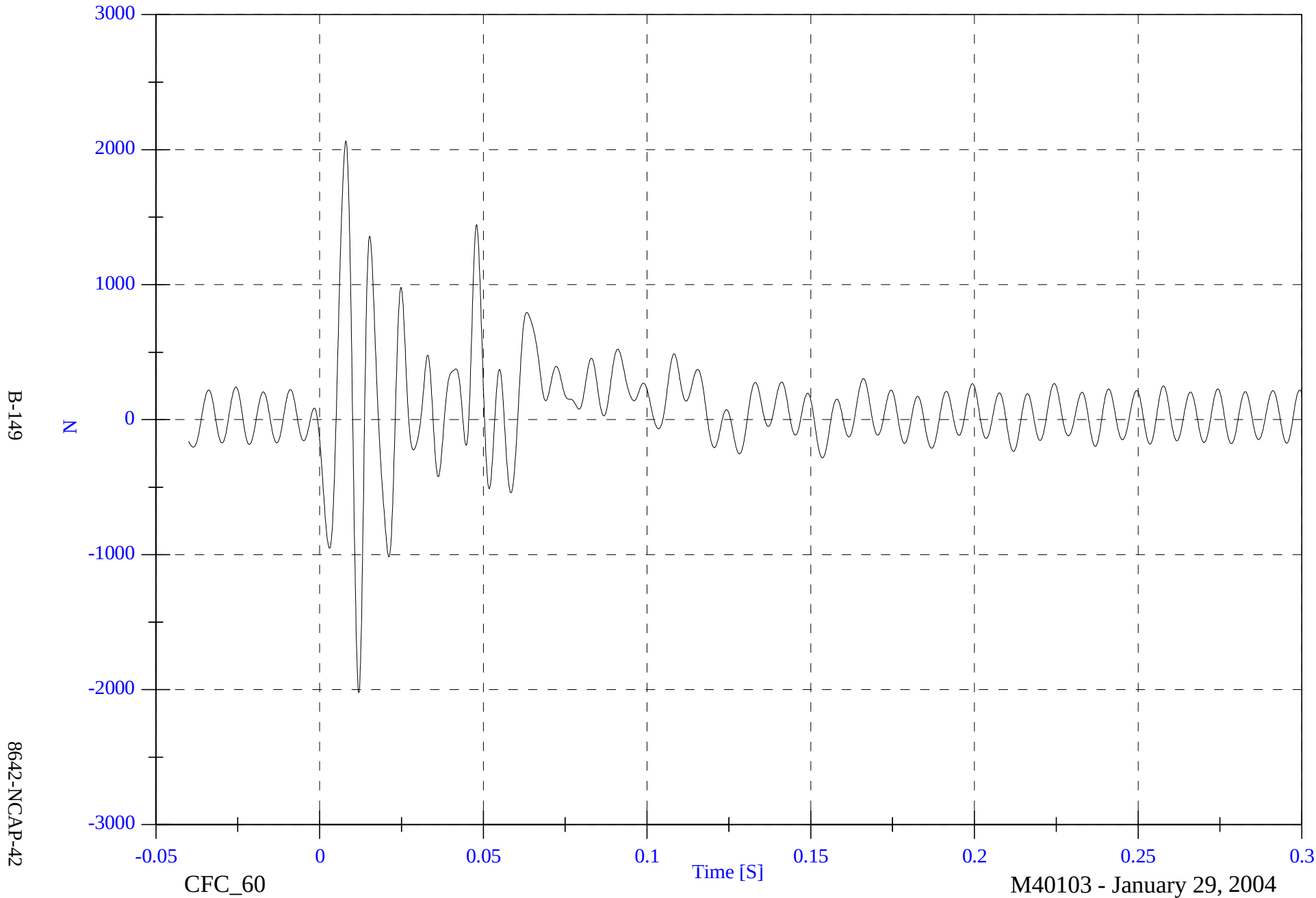


2004 NCAP Test 6 2004 Chevrolet Colorado

Barrier Load Cell A7 Fx

Max: 2065.2 [N] at 0.008 [S]

Min: -2021.6 [N] at 0.012 [S]



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CFC_60

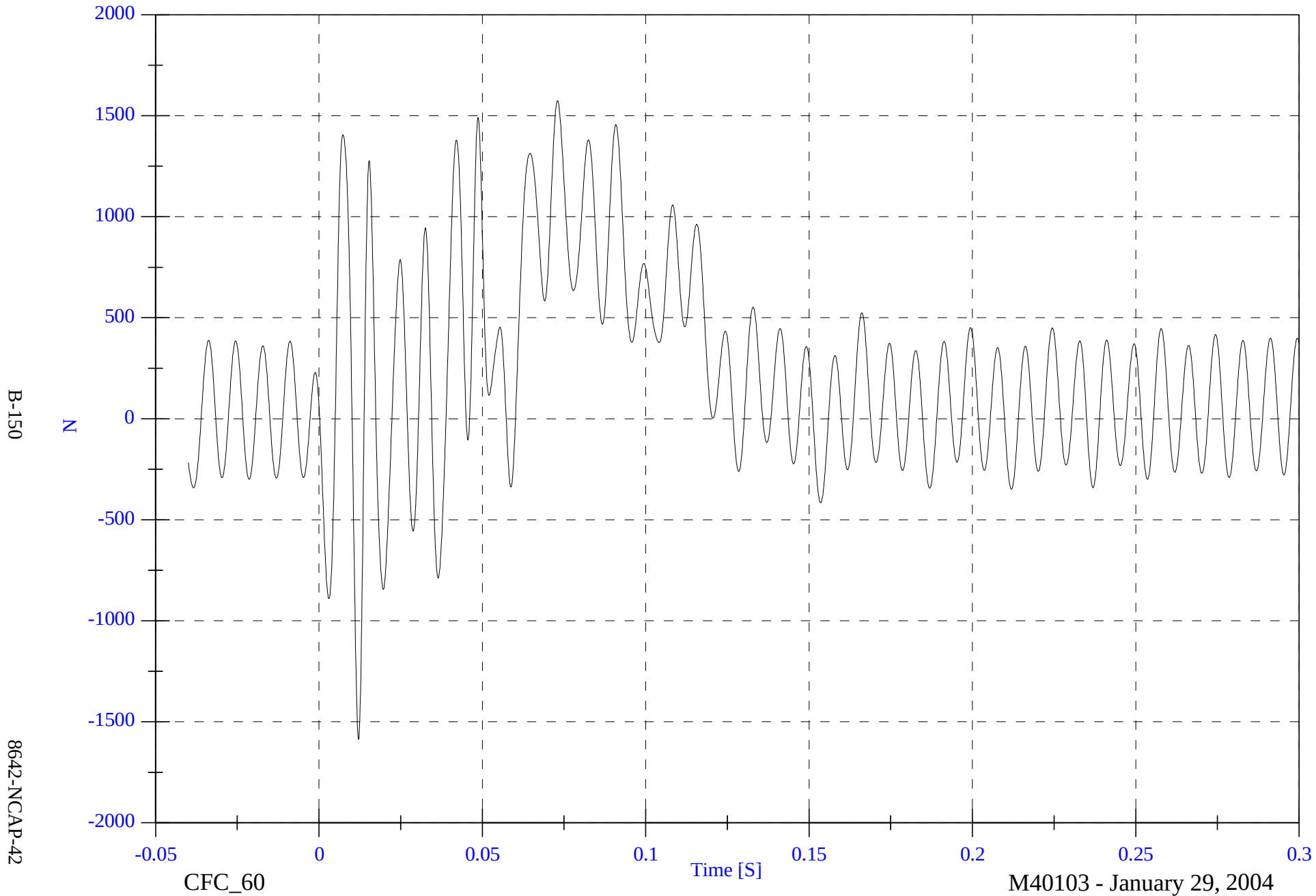
M40103 - January 29, 2004

2004 NCAP Test 6 2004 Chevrolet Colorado

Barrier Load Cell A8 Fx

Max: 1575.0 [N] at 0.073 [S]

Min: -1587.2 [N] at 0.012 [S]

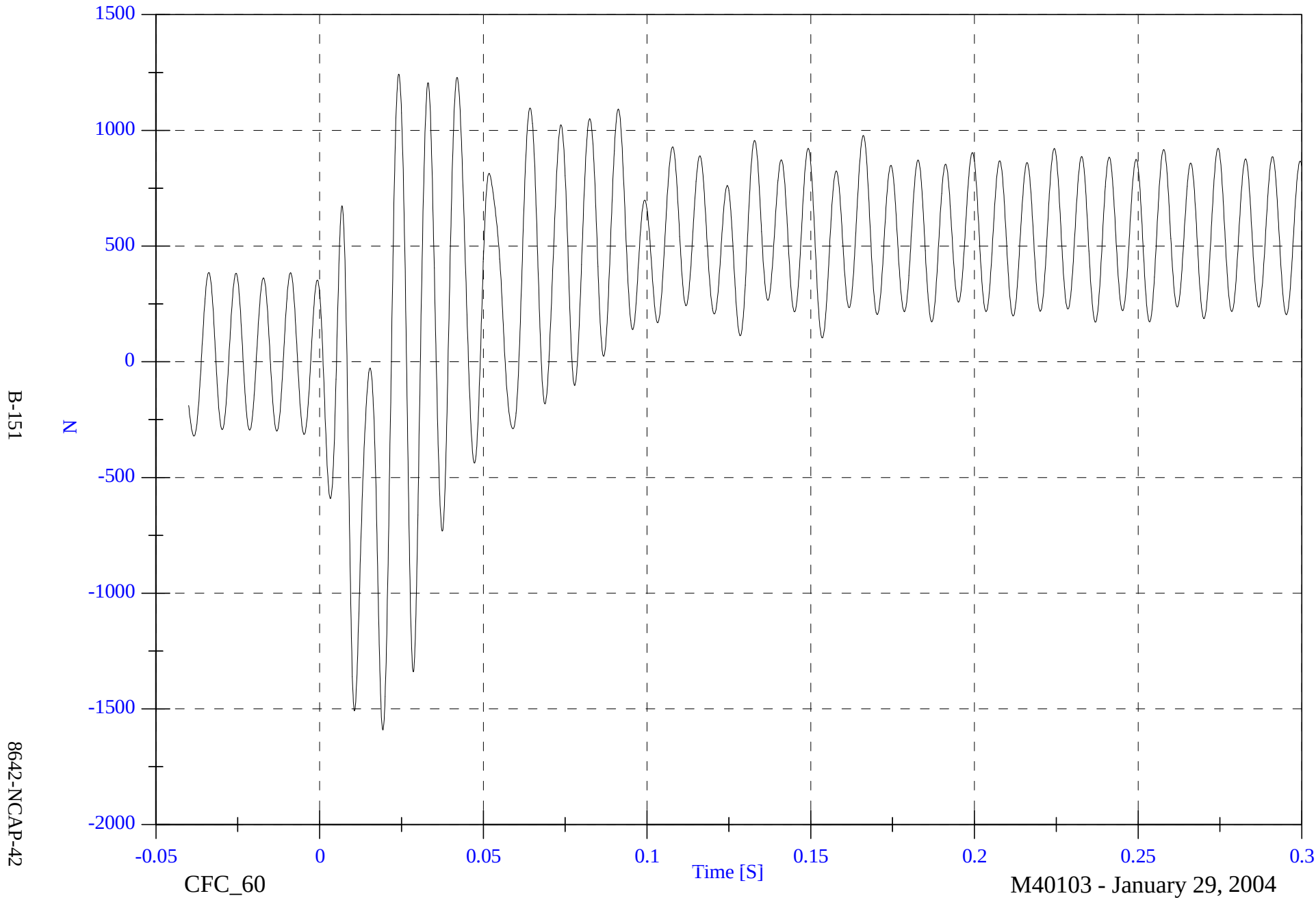


2004 NCAP Test 6 2004 Chevrolet Colorado

Barrier Load Cell A9 Fx

Max: 1243.2 [N] at 0.024 [S]

Min: -1591.4 [N] at 0.019 [S]

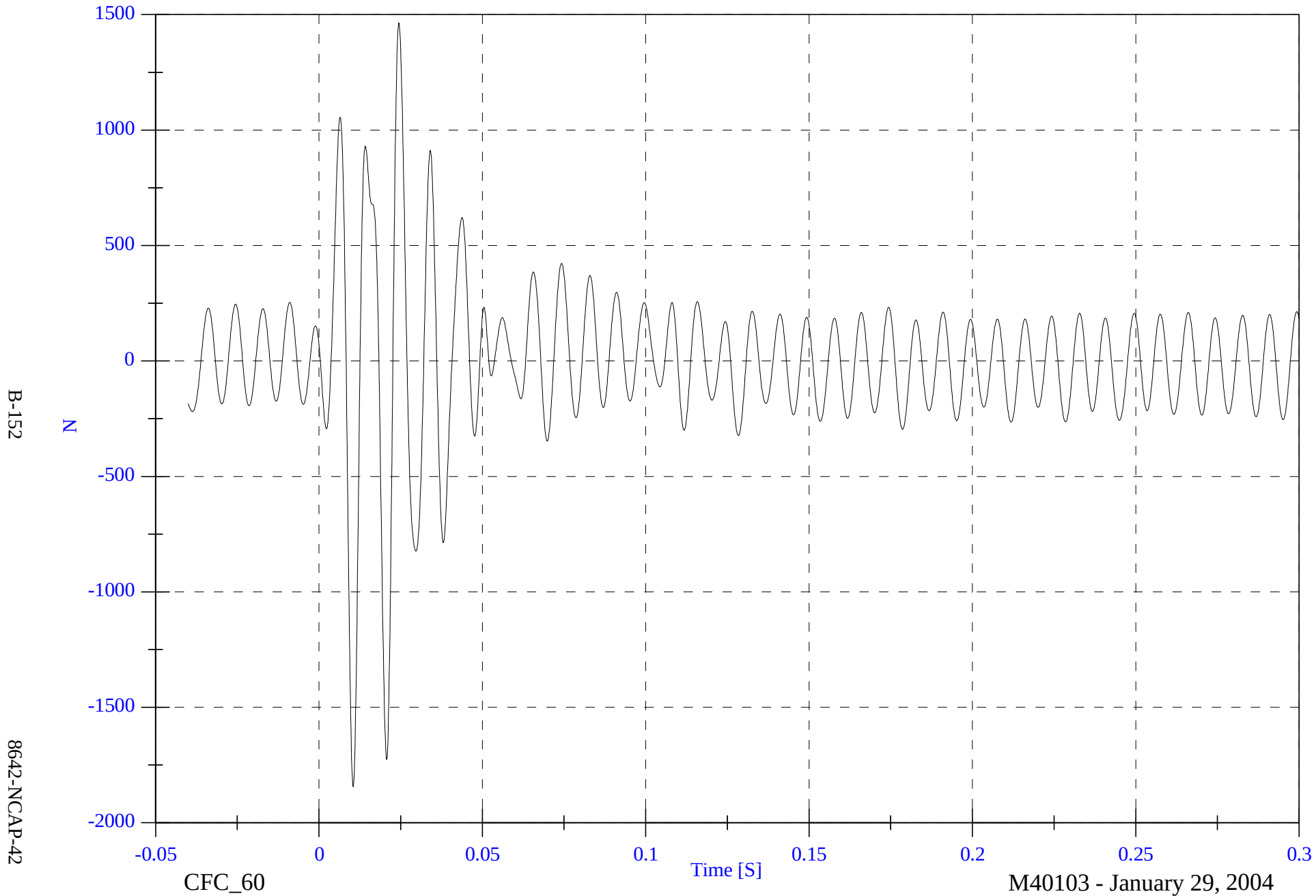


2004 NCAP Test 6 2004 Chevrolet Colorado

Barrier Load Cell B1 Fx

Max: 1465.2 [N] at 0.024 [S]

Min: -1844.3 [N] at 0.010 [S]

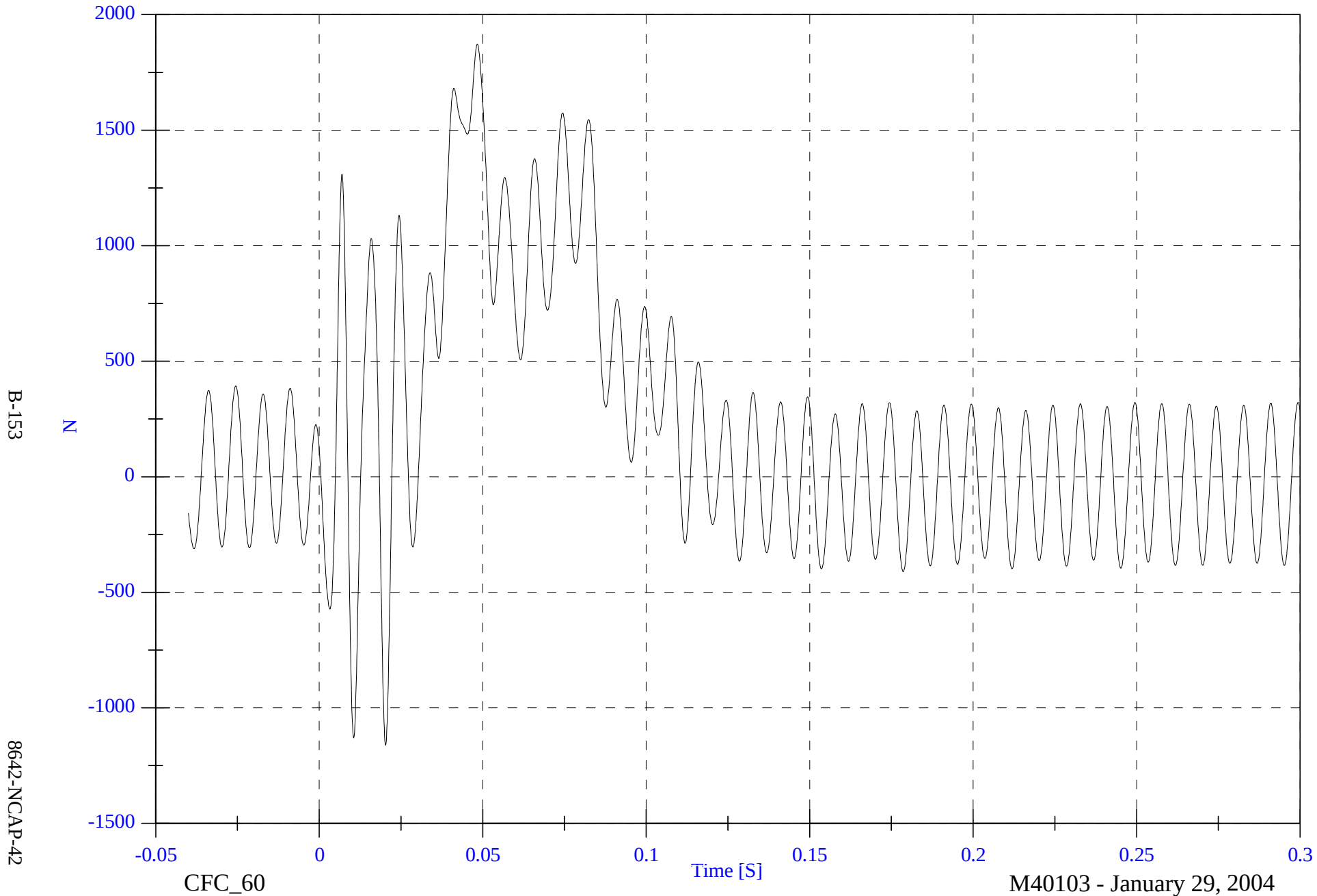


2004 NCAP Test 6 2004 Chevrolet Colorado

Max: 1872.8 [N] at 0.048 [S]

Barrier Load Cell B2 Fx

Min: -1161.4 [N] at 0.020 [S]

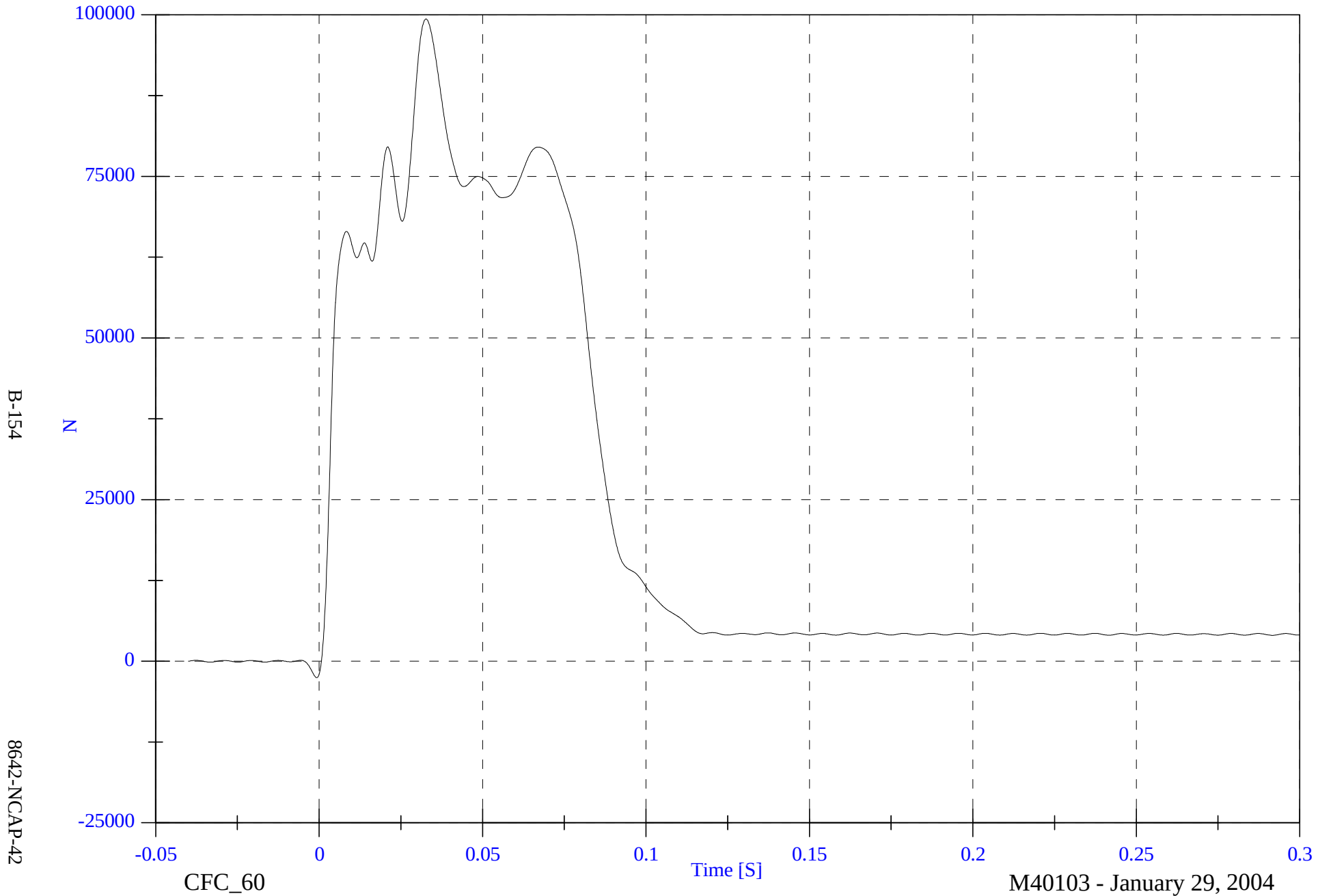


2004 NCAP Test 6 2004 Chevrolet Colorado

Barrier Load Cell B3 Fx

Max: 99339.5 [N] at 0.033 [S]

Min: -2550.7 [N] at -0.001 [S]



2004 NCAP Test 6 2004 Chevrolet Colorado

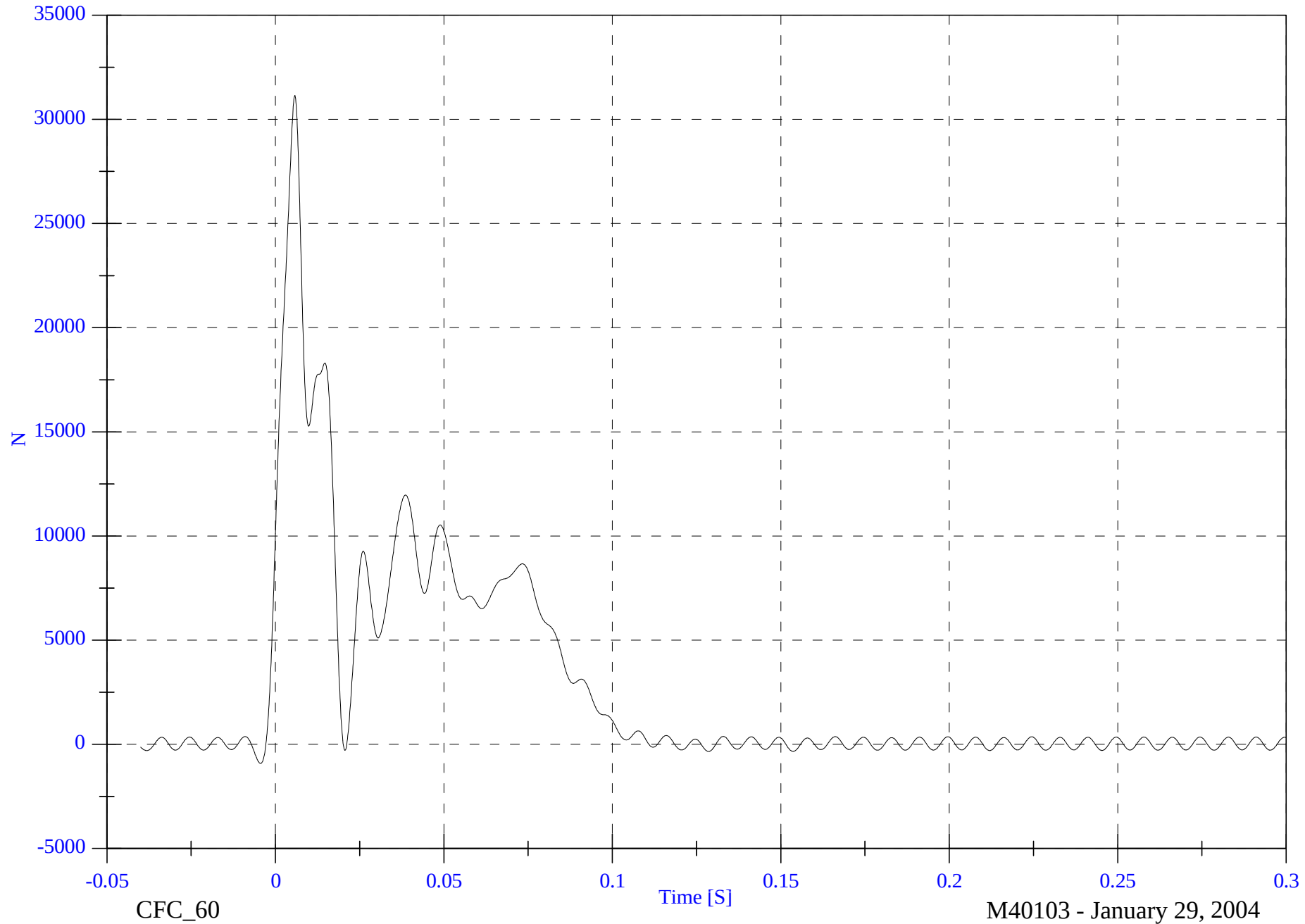
Barrier Load Cell B4 Fx

Max: 31143.0 [N] at 0.006 [S]

Min: -916.5 [N] at -0.004 [S]

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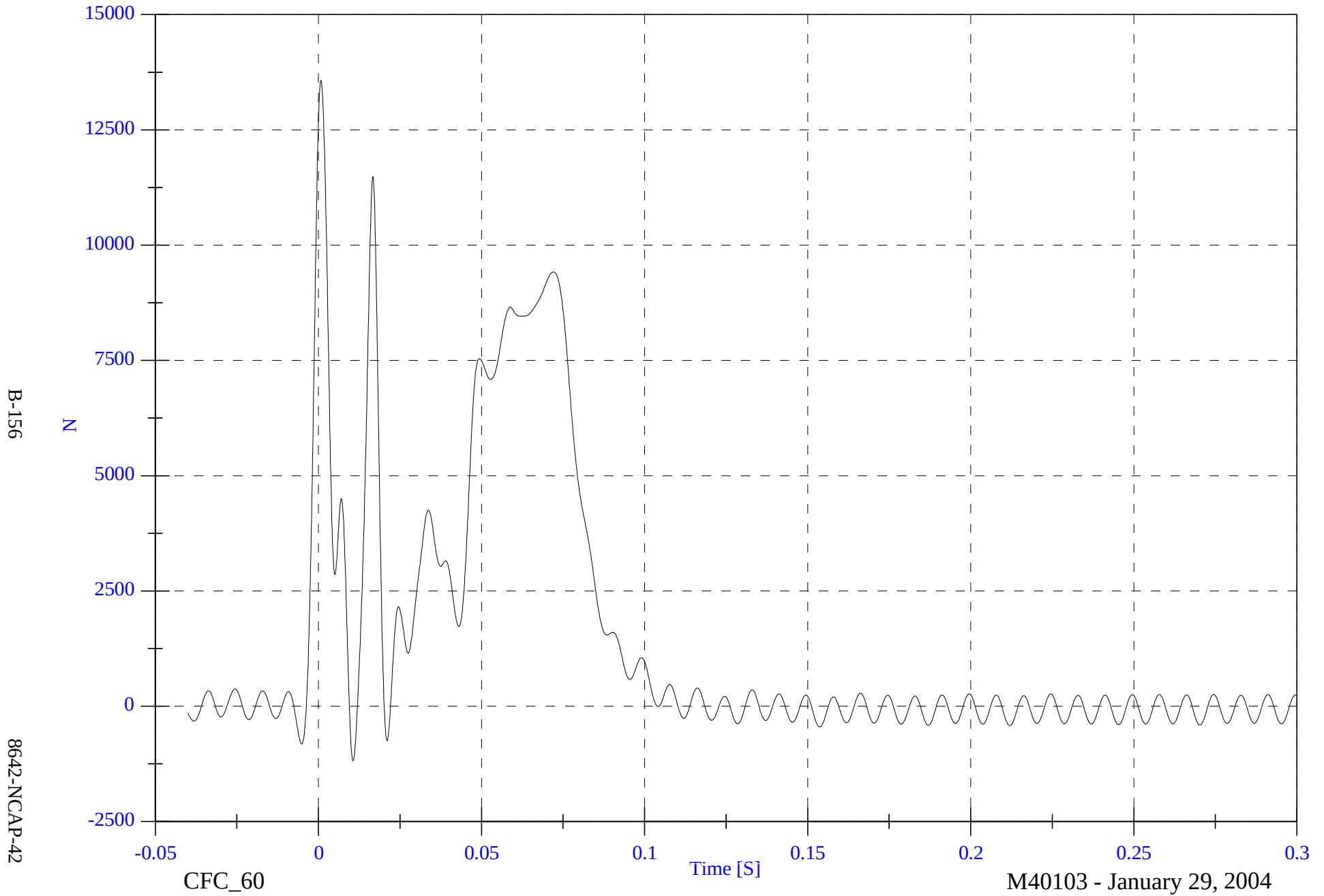


2004 NCAP Test 6 2004 Chevrolet Colorado

Barrier Load Cell B5 Fx

Max: 13574.9 [N] at 0.001 [S]

Min: -1186.9 [N] at 0.011 [S]

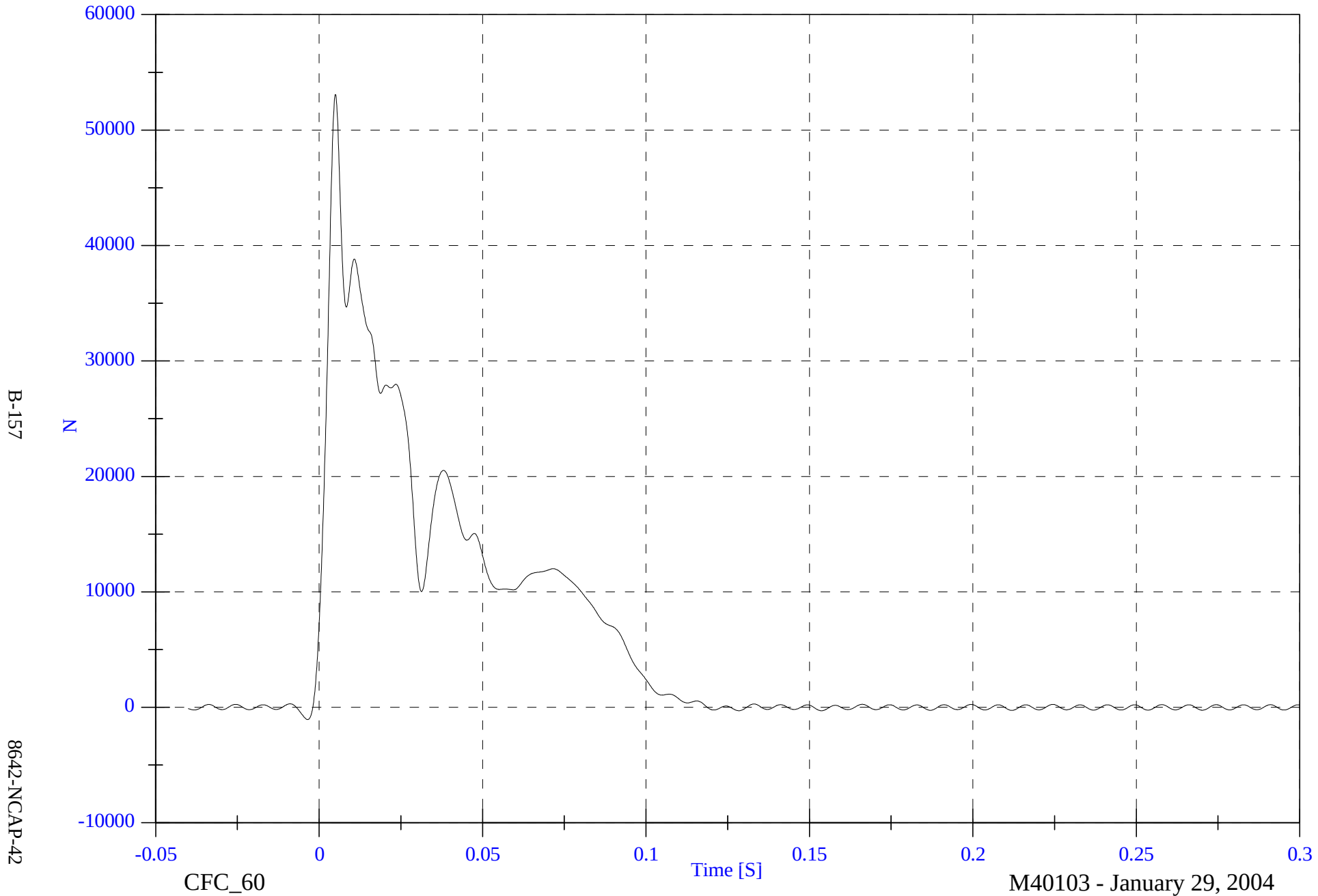


2004 NCAP Test 6 2004 Chevrolet Colorado

Barrier Load Cell B6 Fx

Max: 53096.6 [N] at 0.005 [S]

Min: -1057.7 [N] at -0.004 [S]

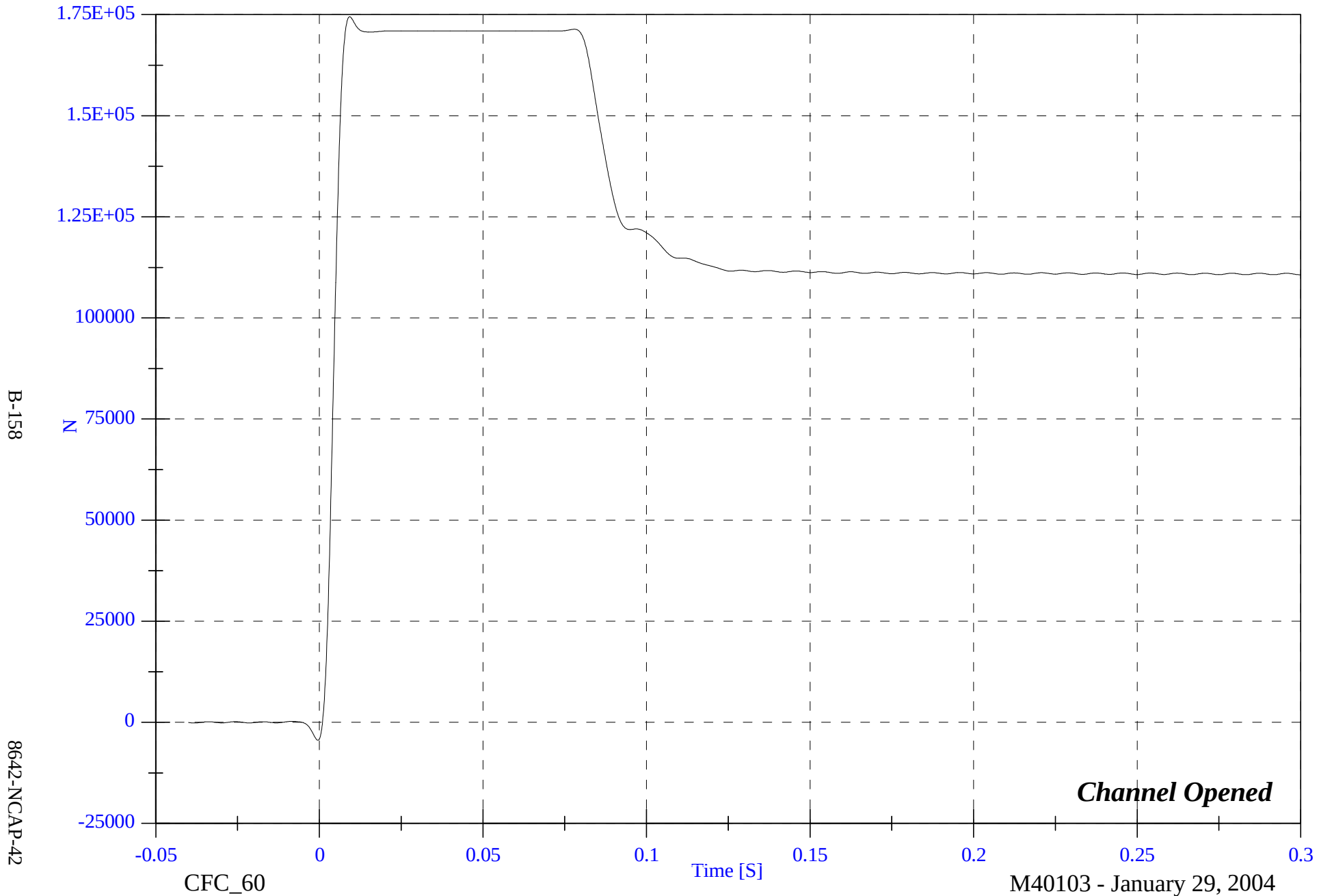


2004 NCAP Test 6 2004 Chevrolet Colorado

Max: 174499.2 [N] at 0.009 [S]

Barrier Load Cell B7 Fx

Min: -4440.0 [N] at -0.001 [S]

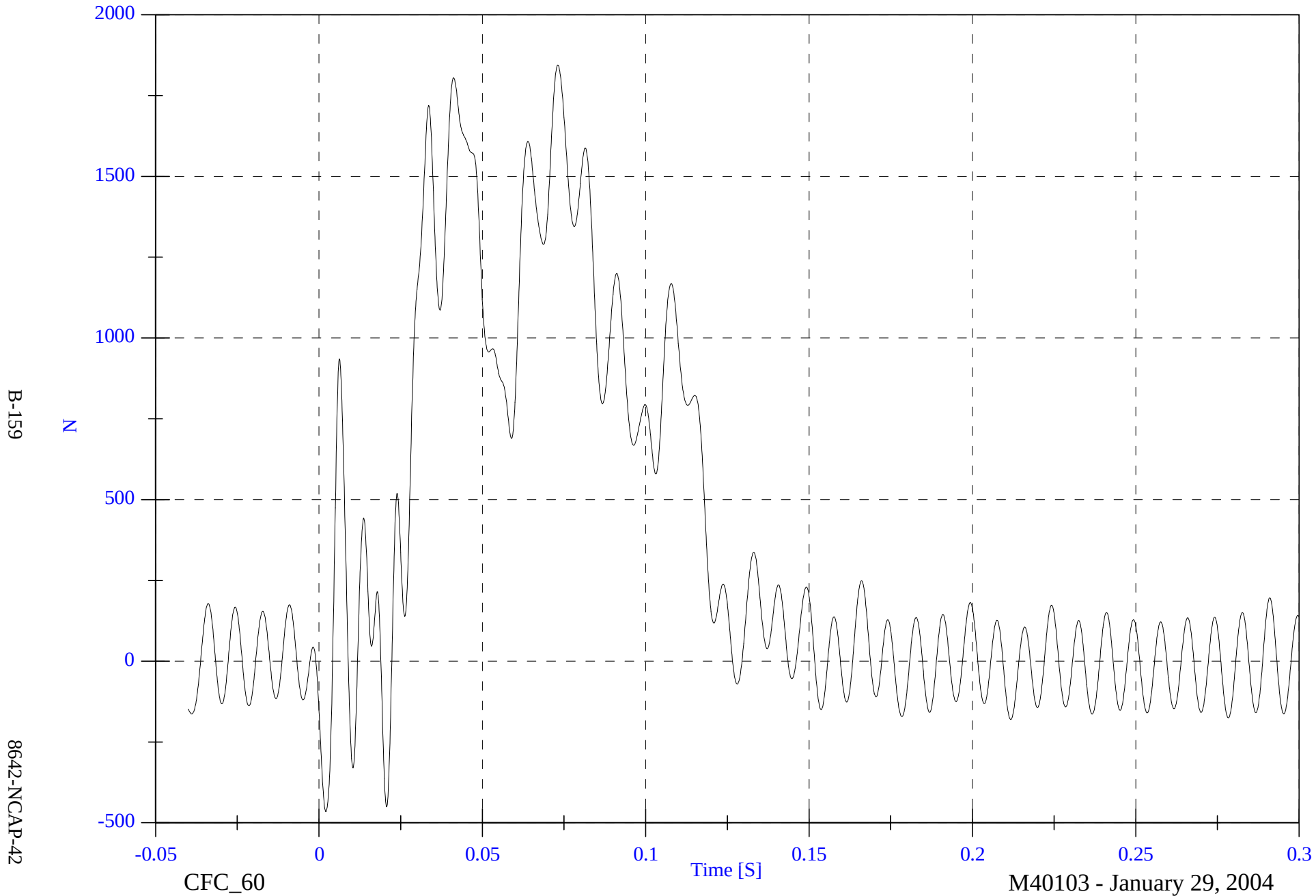


2004 NCAP Test 6 2004 Chevrolet Colorado

Barrier Load Cell B8 Fx

Max: 1844.4 [N] at 0.073 [S]

Min: -466.0 [N] at 0.002 [S]

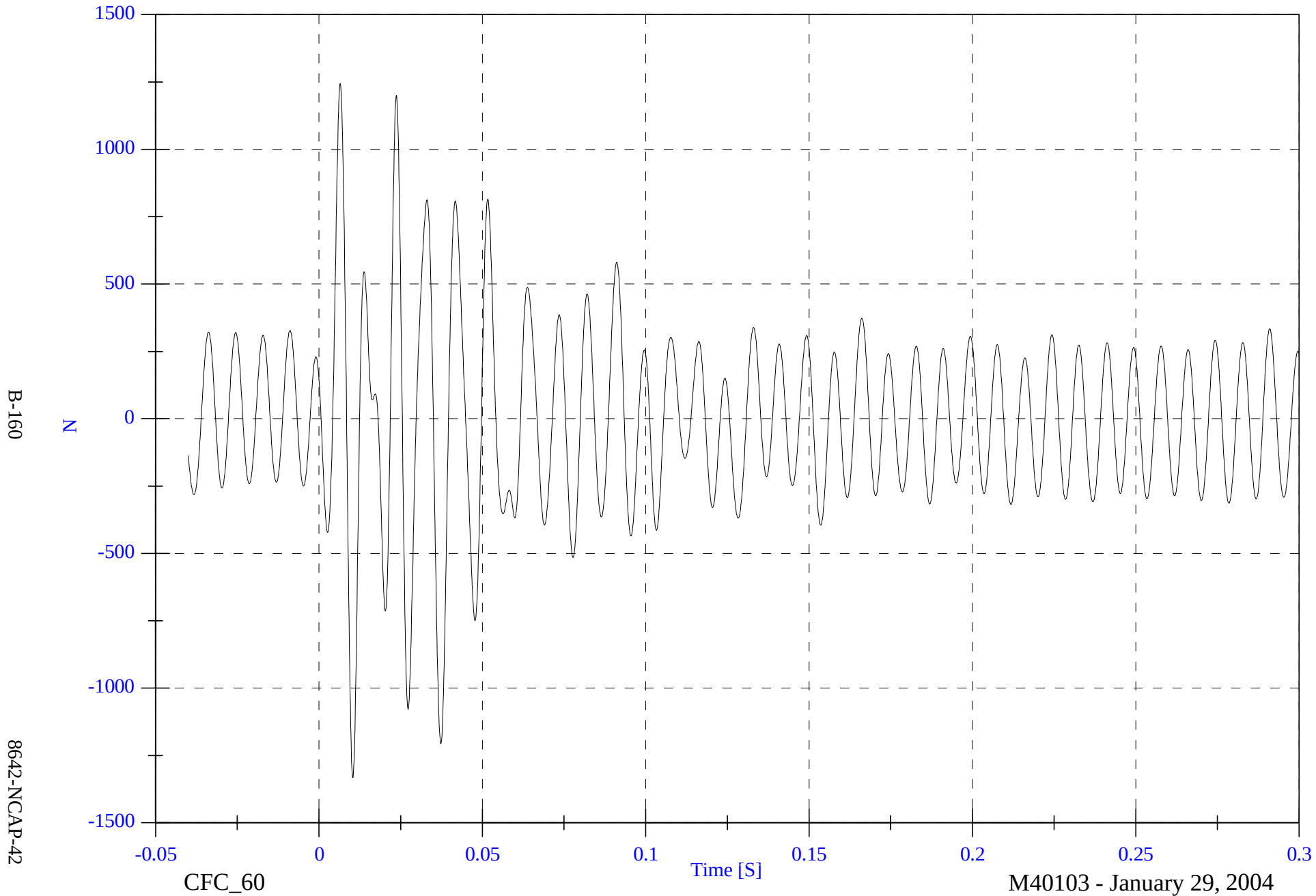


2004 NCAP Test 6 2004 Chevrolet Colorado

Barrier Load Cell B9 Fx

Max: 1244.7 [N] at 0.006 [S]

Min: -1332.3 [N] at 0.010 [S]

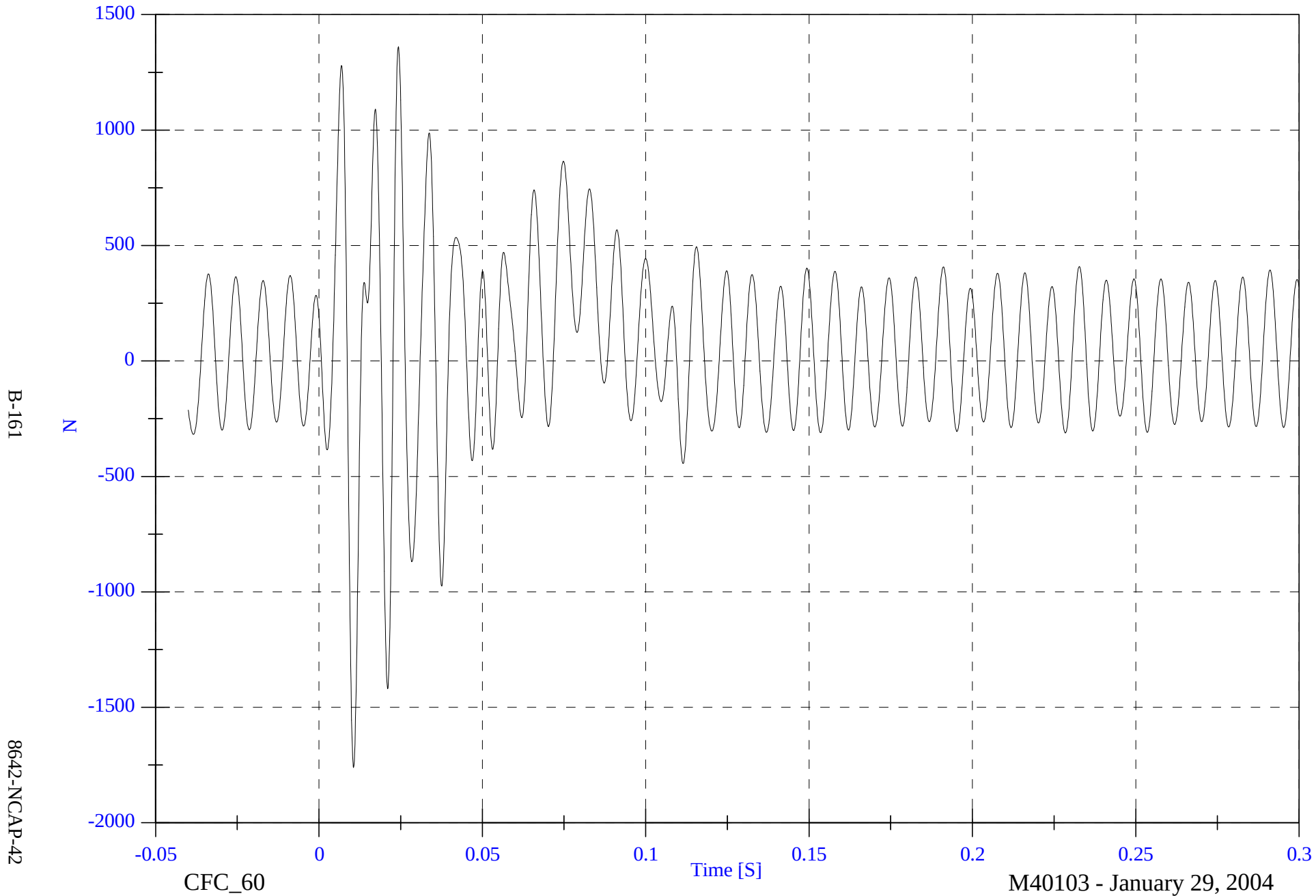


2004 NCAP Test 6 2004 Chevrolet Colorado

Barrier Load Cell C1 Fx

Max: 1361.4 [N] at 0.024 [S]

Min: -1761.3 [N] at 0.011 [S]

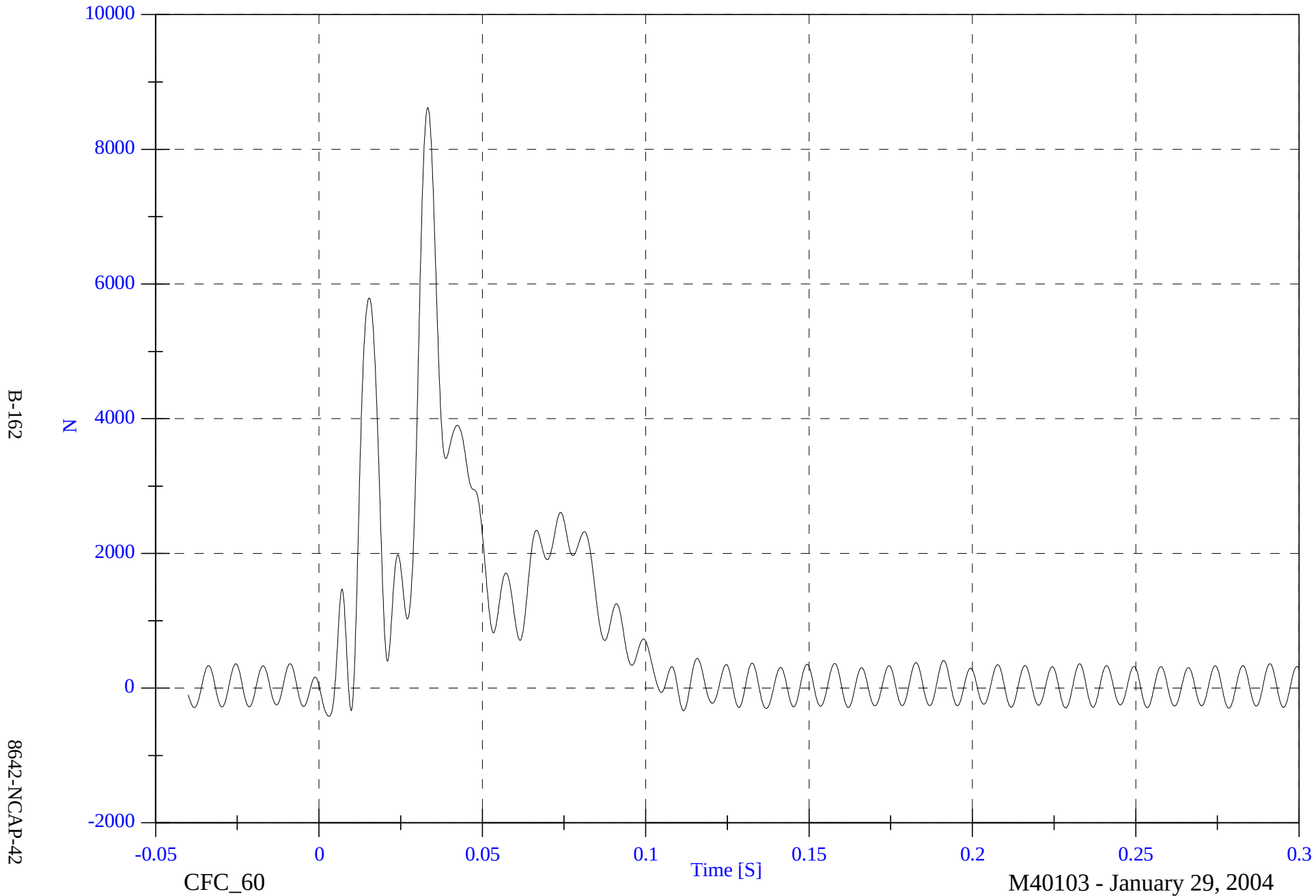


2004 NCAP Test 6 2004 Chevrolet Colorado

Barrier Load Cell C2 Fx

Max: 8622.6 [N] at 0.033 [S]

Min: -418.3 [N] at 0.003 [S]

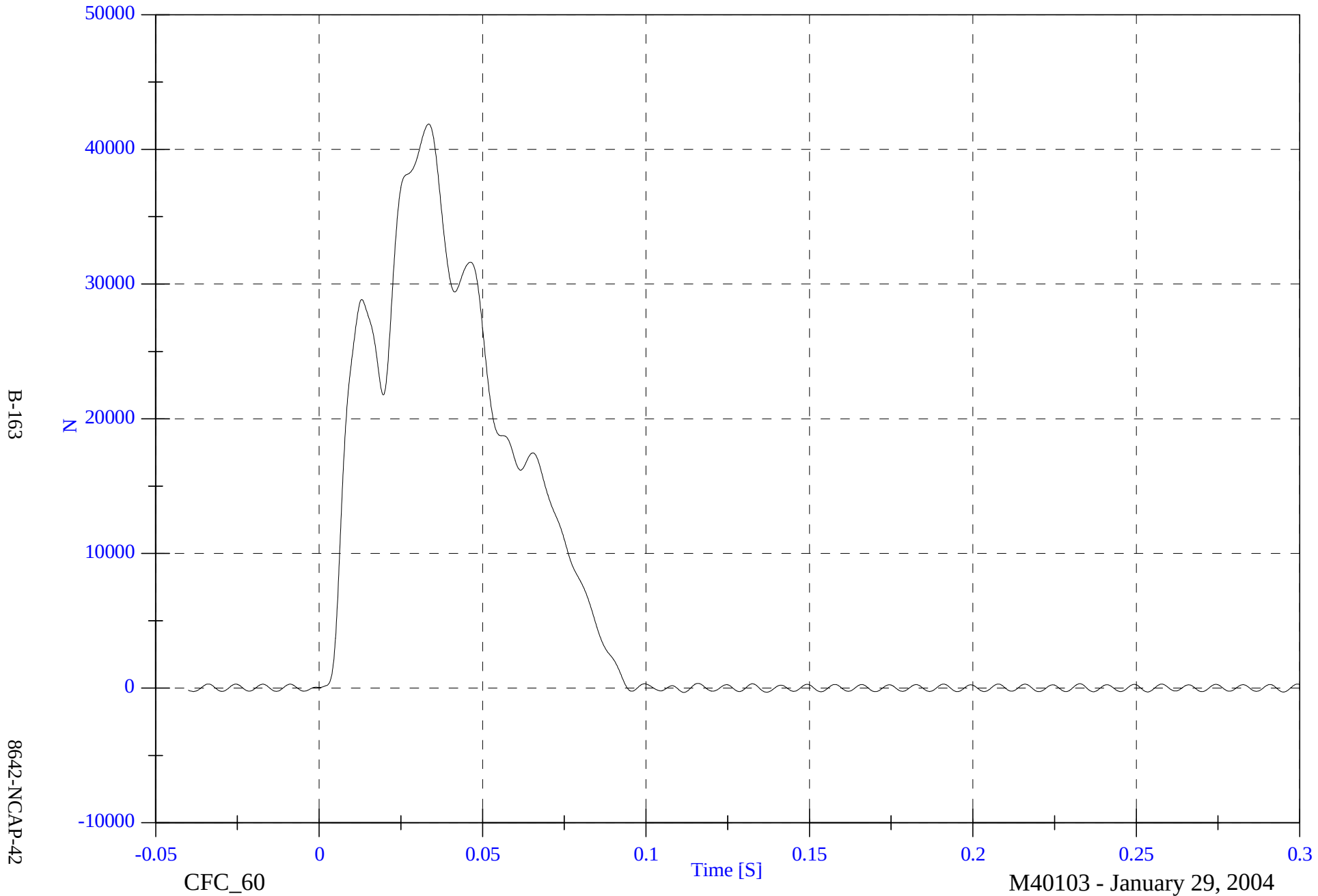


2004 NCAP Test 6 2004 Chevrolet Colorado

Barrier Load Cell C3 Fx

Max: 41882.3 [N] at 0.033 [S]

Min: -313.0 [N] at 0.112 [S]

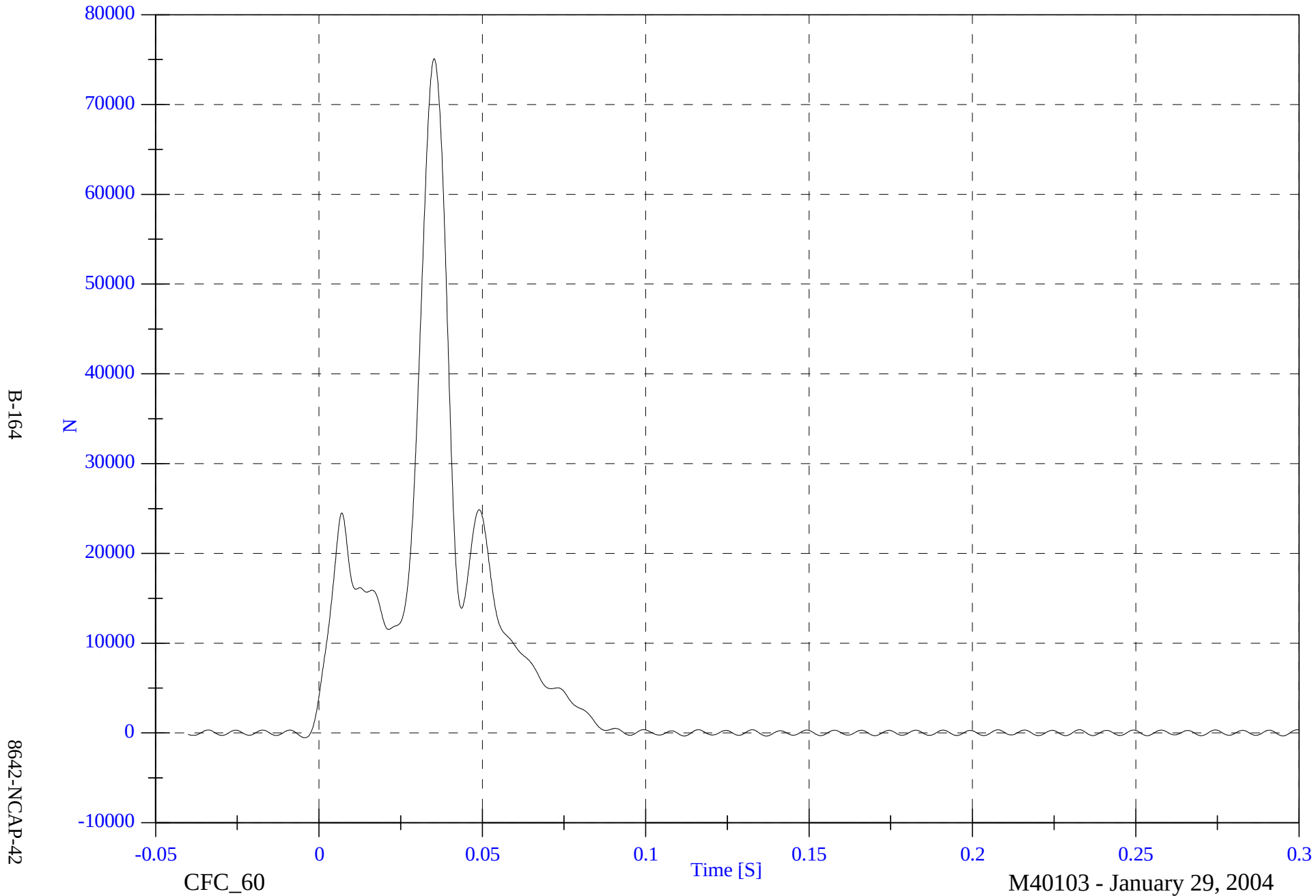


2004 NCAP Test 6 2004 Chevrolet Colorado

Barrier Load Cell C4 Fx

Max: 75106.3 [N] at 0.035 [S]

Min: -530.9 [N] at -0.004 [S]



2004 NCAP Test 6 2004 Chevrolet Colorado

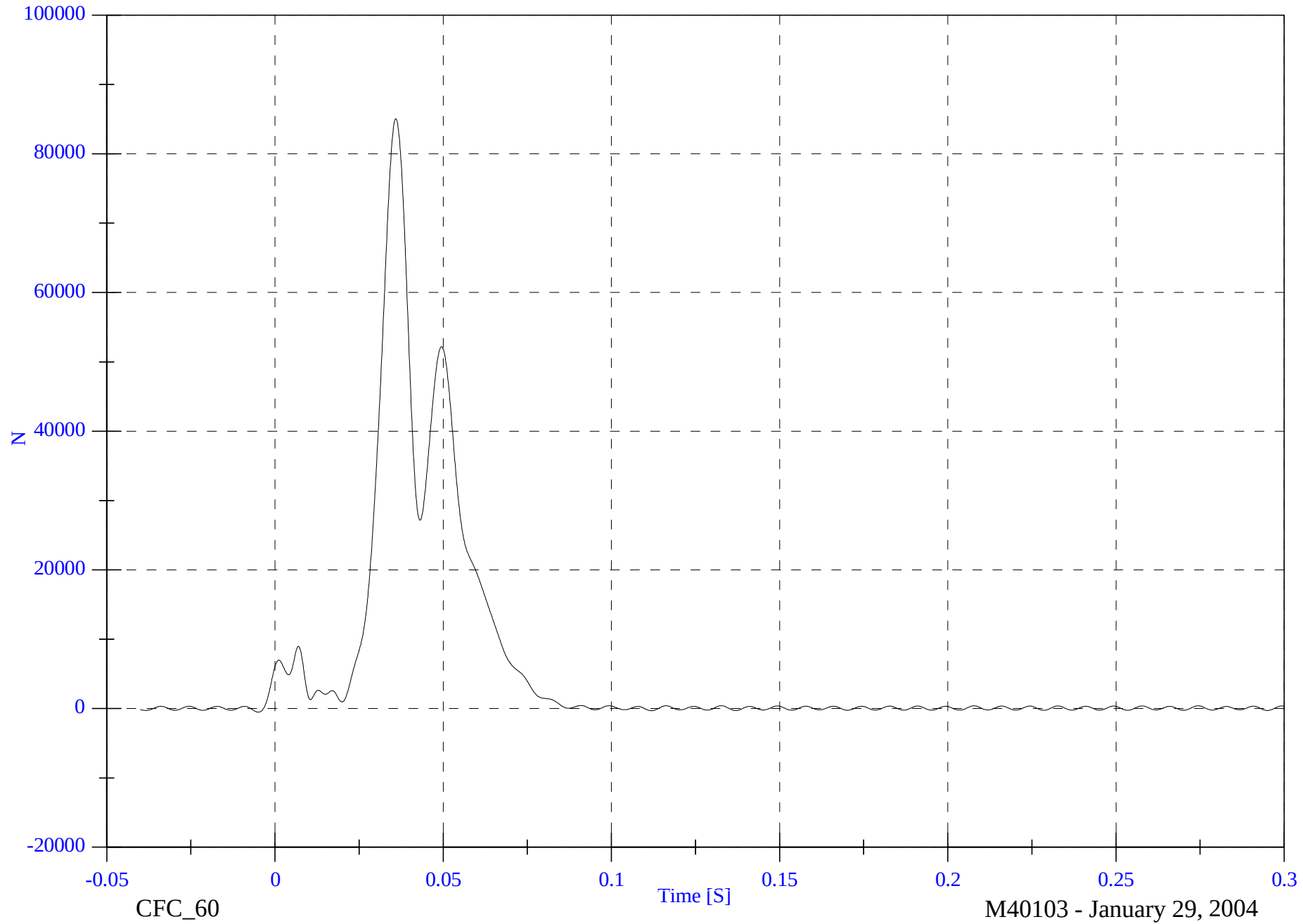
Barrier Load Cell C5 Fx

Max: 85073.0 [N] at 0.036 [S]

Min: -524.8 [N] at -0.005 [S]

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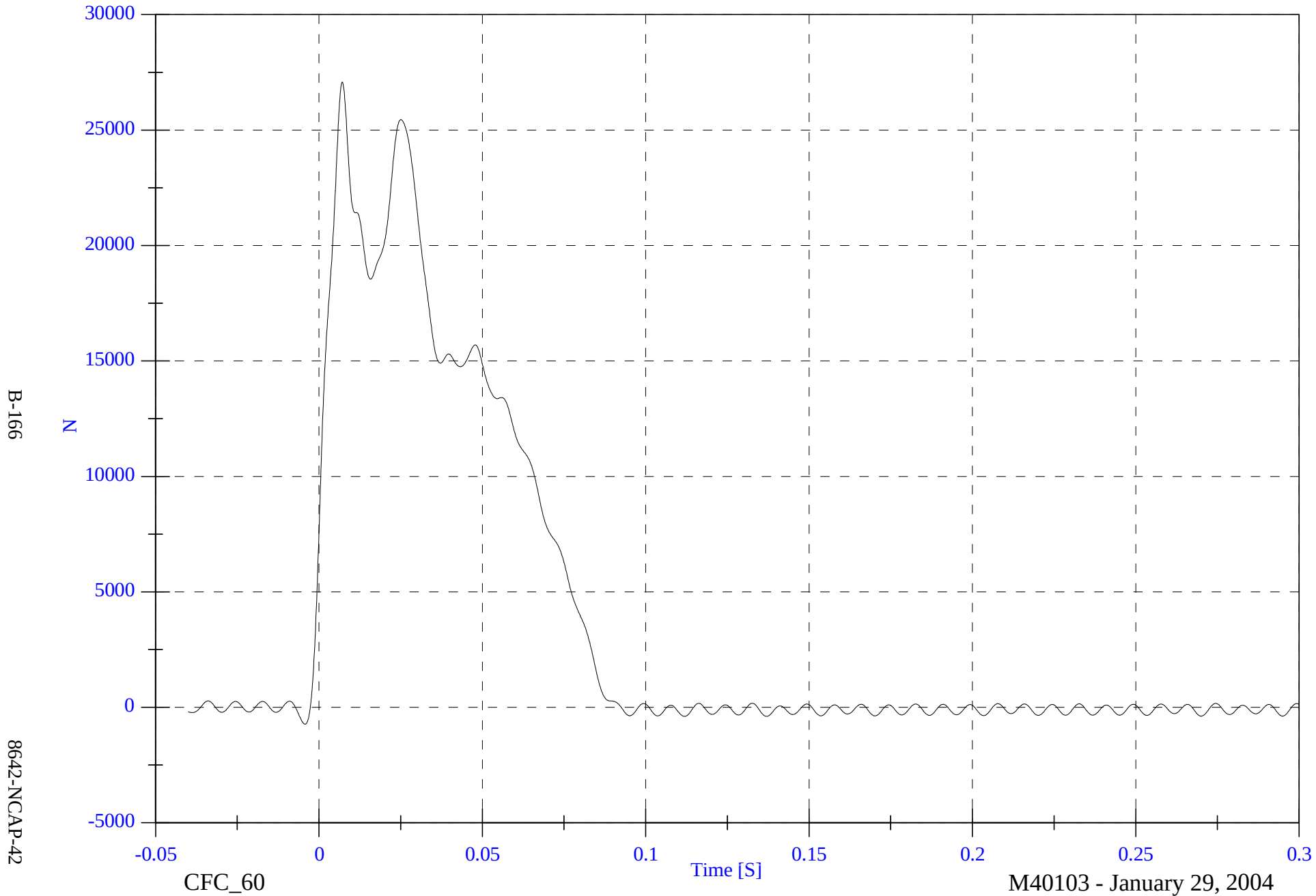


2004 NCAP Test 6 2004 Chevrolet Colorado

Barrier Load Cell C6 Fx

Max: 27084.9 [N] at 0.007 [S]

Min: -729.7 [N] at -0.004 [S]

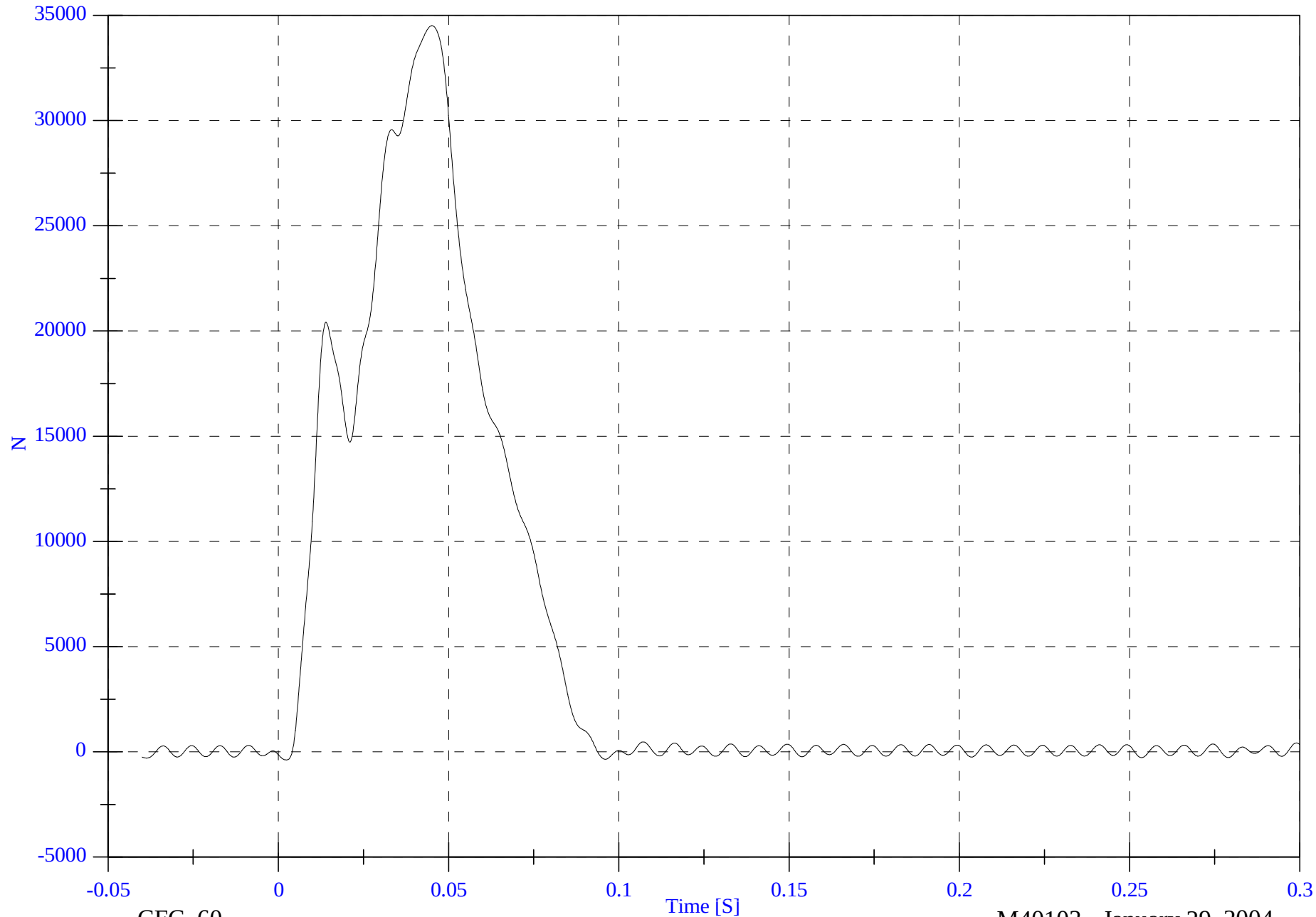


2004 NCAP Test 6 2004 Chevrolet Colorado

Barrier Load Cell C7 Fx

Max: 34508.7 [N] at 0.045 [S]

Min: -383.9 [N] at 0.002 [S]



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CFC_60

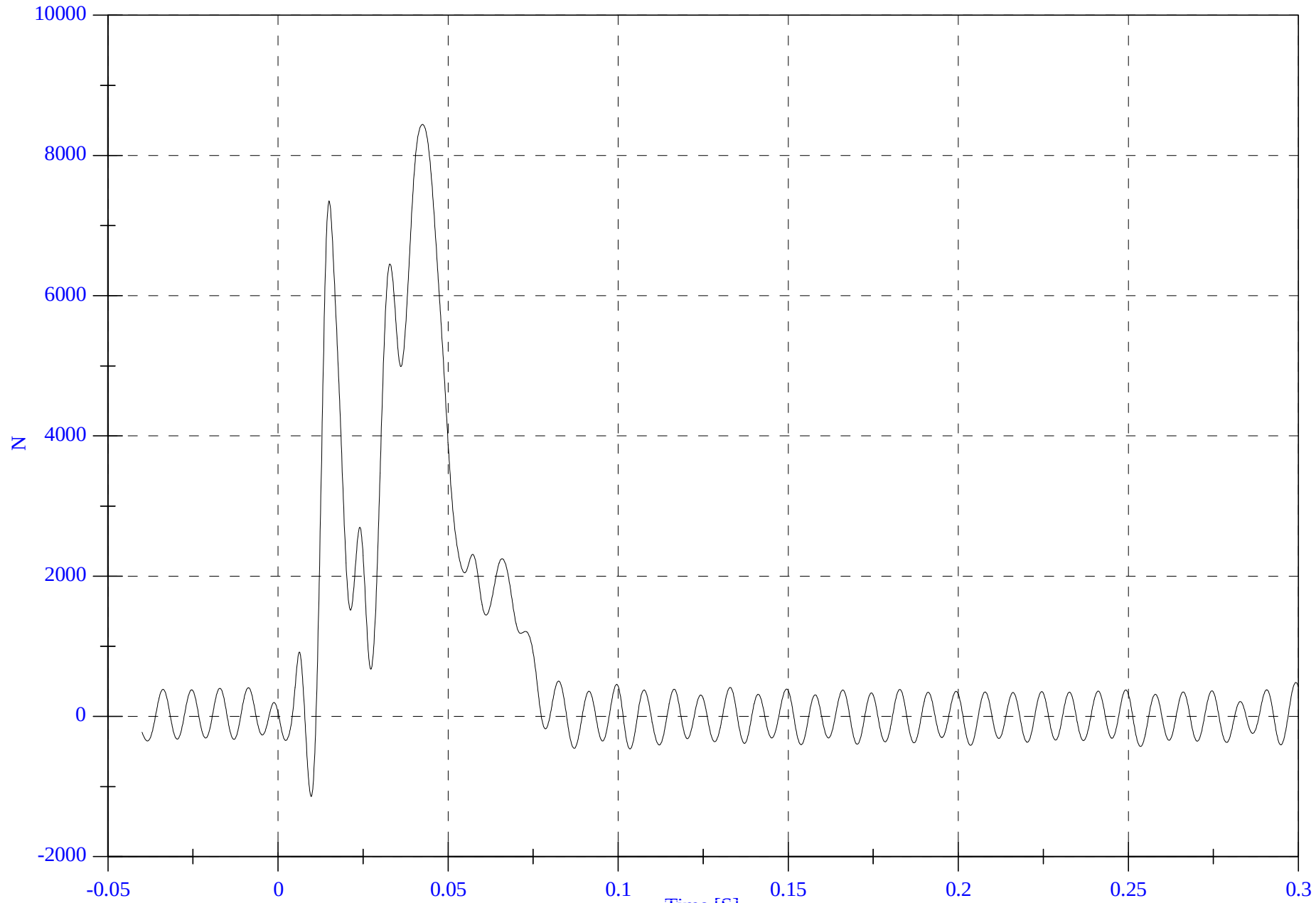
M40103 - January 29, 2004

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Barrier Load Cell C8 Fx

Max: 8442.4 [N] at 0.042 [S]

Min: -1141.9 [N] at 0.010 [S]



CFC_60

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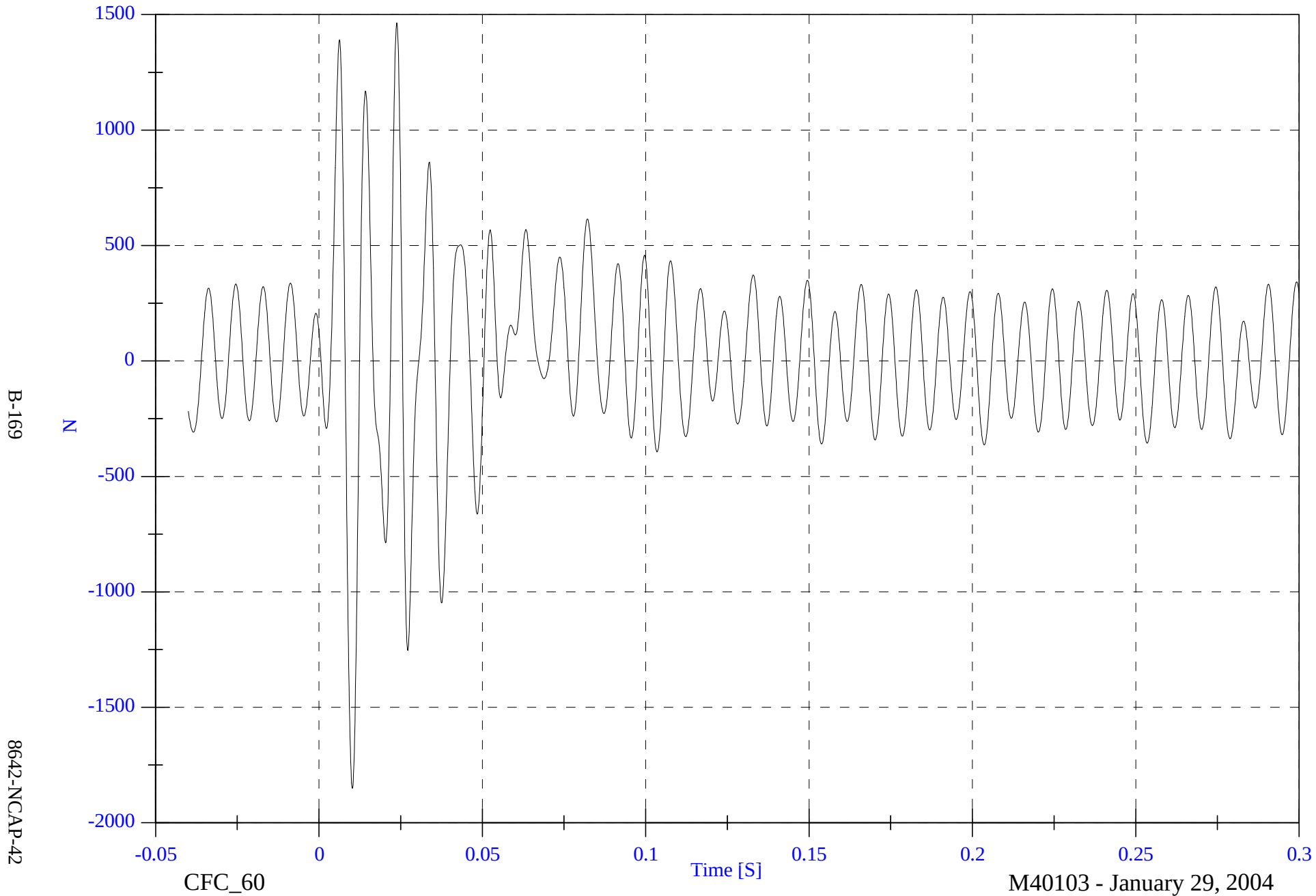
8642-NCAP-42

2004 NCAP Test 6 2004 Chevrolet Colorado

Barrier Load Cell C9 Fx

Max: 1465.1 [N] at 0.024 [S]

Min: -1851.1 [N] at 0.010 [S]

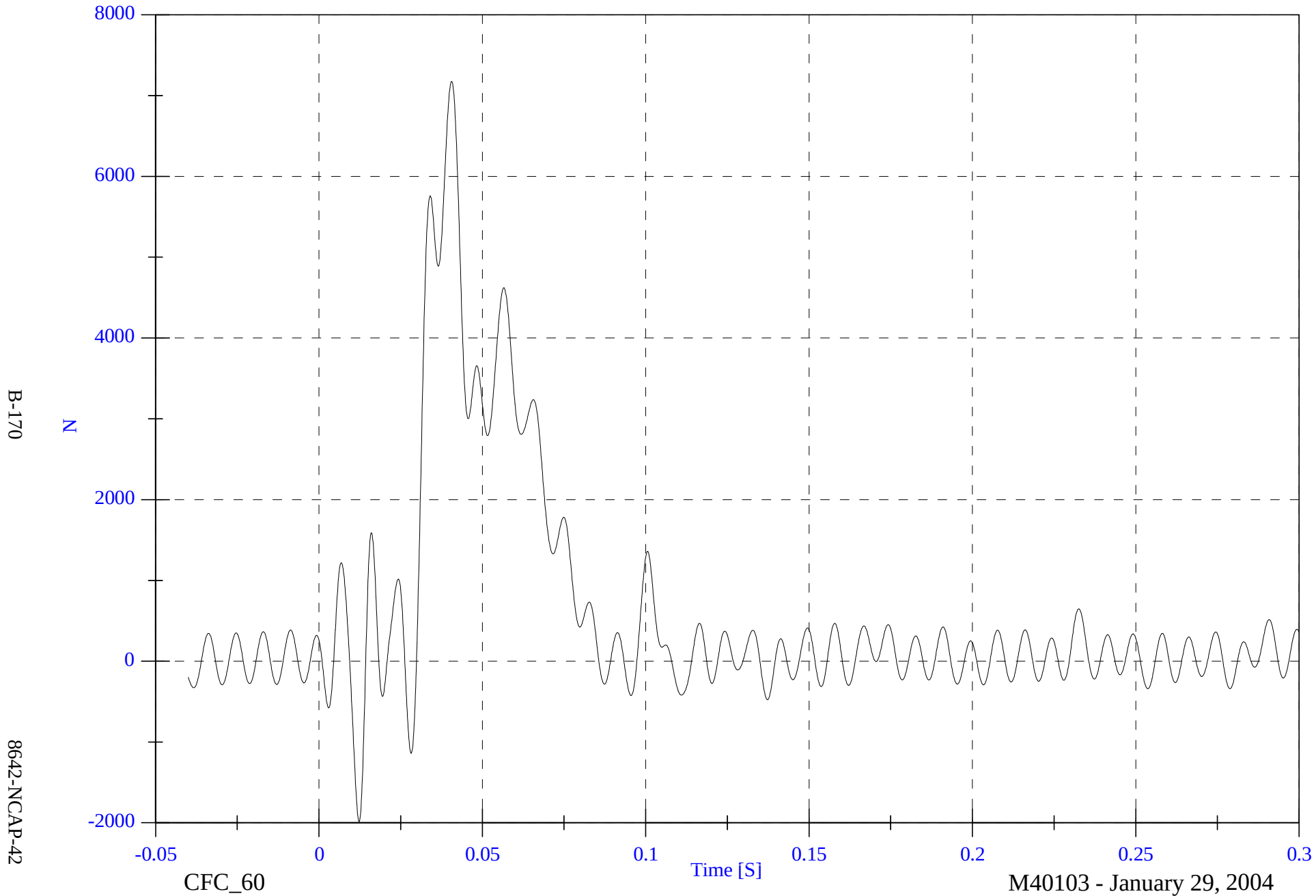


2004 NCAP Test 6 2004 Chevrolet Colorado

Barrier Load Cell D1 Fx

Max: 7175.5 [N] at 0.041 [S]

Min: -1988.5 [N] at 0.012 [S]

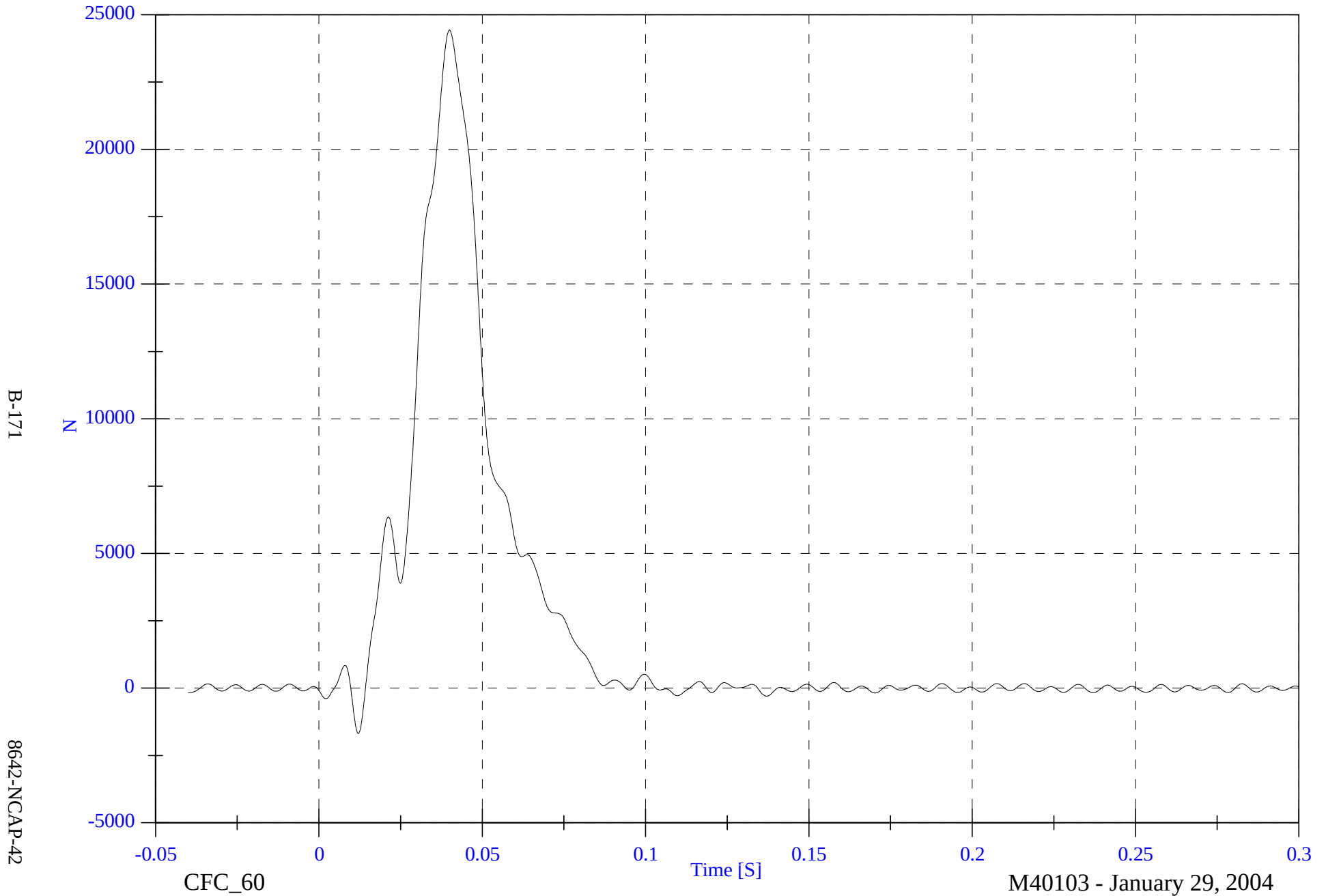


2004 NCAP Test 6 2004 Chevrolet Colorado

Barrier Load Cell D2 Fx

Max: 24430.3 [N] at 0.040 [S]

Min: -1687.4 [N] at 0.012 [S]

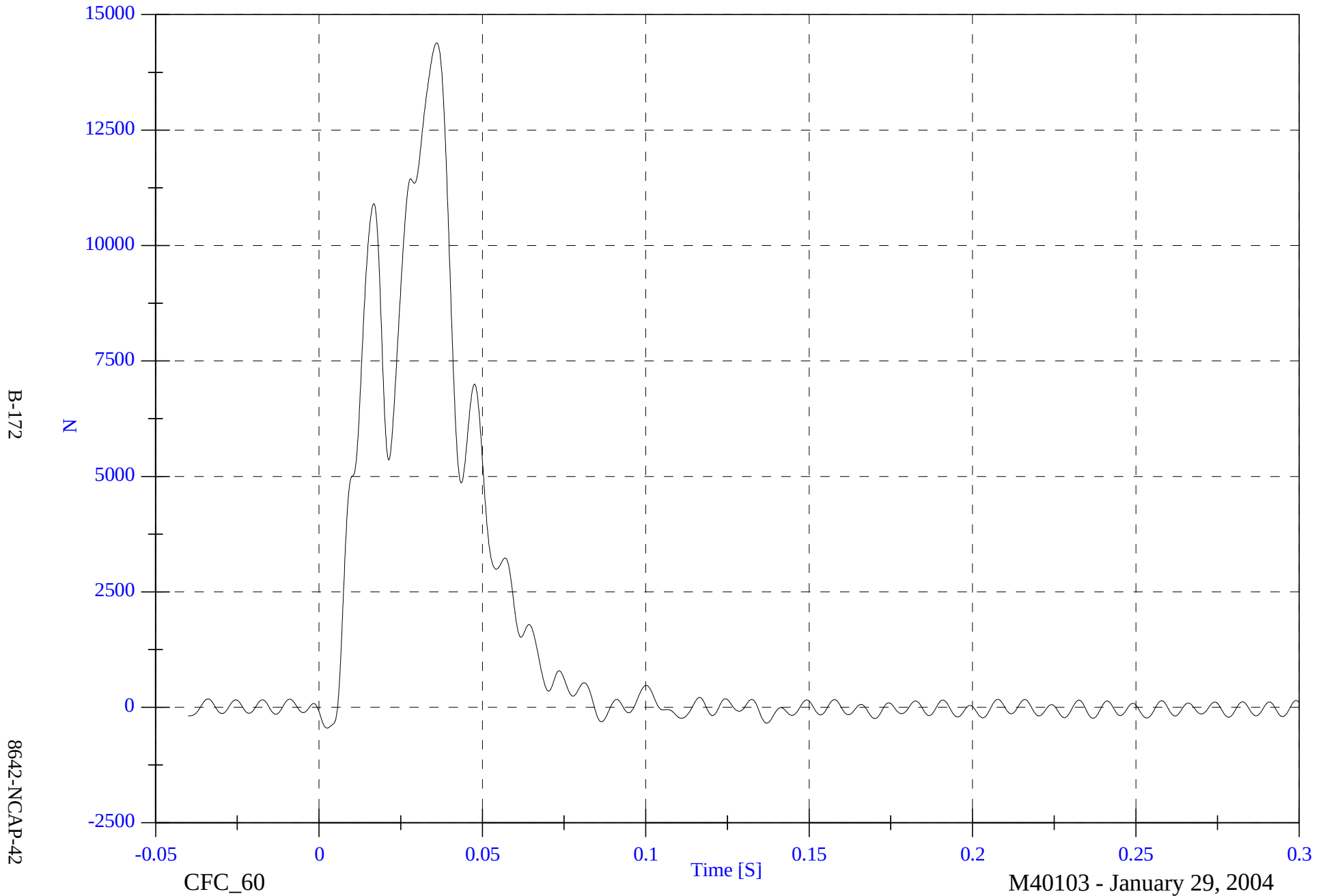


2004 NCAP Test 6 2004 Chevrolet Colorado

Barrier Load Cell D3 Fx

Max: 14390.1 [N] at 0.036 [S]

Min: -449.3 [N] at 0.002 [S]

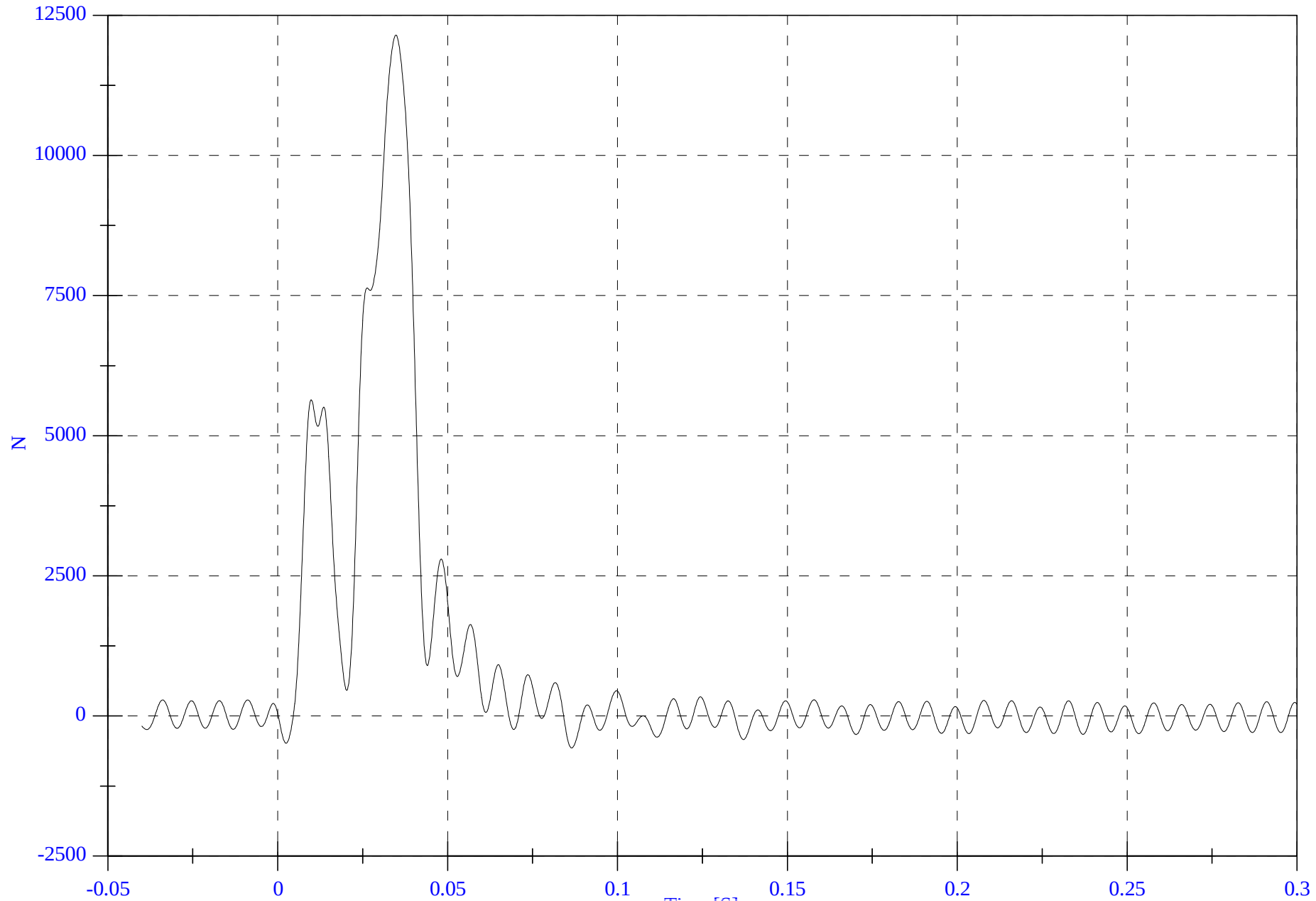


2004 NCAP Test 6 2004 Chevrolet Colorado

Barrier Load Cell D4 Fx

Max: 12147.4 [N] at 0.035 [S]

Min: -571.0 [N] at 0.086 [S]



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CFC_60

Time [S]

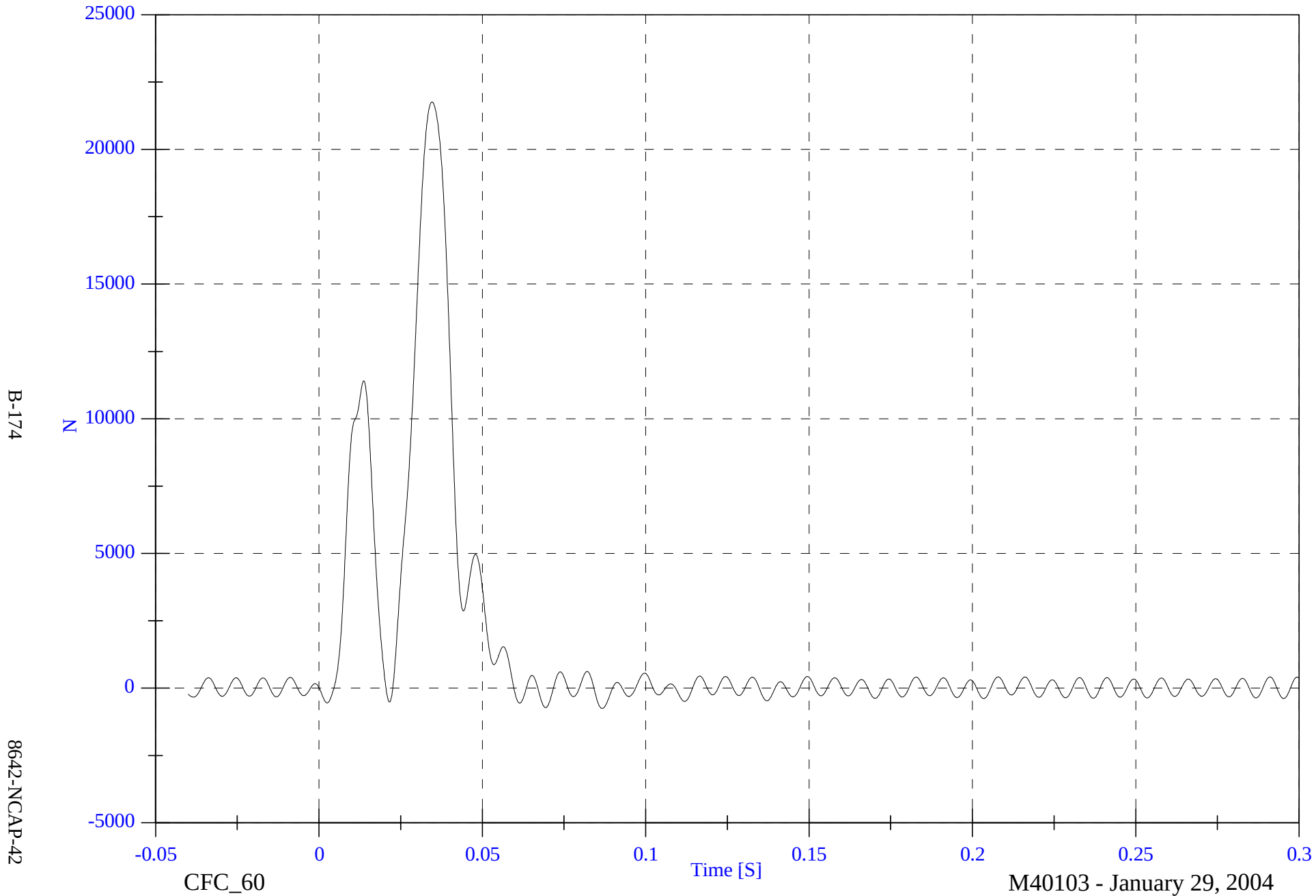
M40103 - January 29, 2004

2004 NCAP Test 6 2004 Chevrolet Colorado

Barrier Load Cell D5 Fx

Max: 21763.2 [N] at 0.035 [S]

Min: -756.2 [N] at 0.087 [S]



2004 NCAP Test 6 2004 Chevrolet Colorado

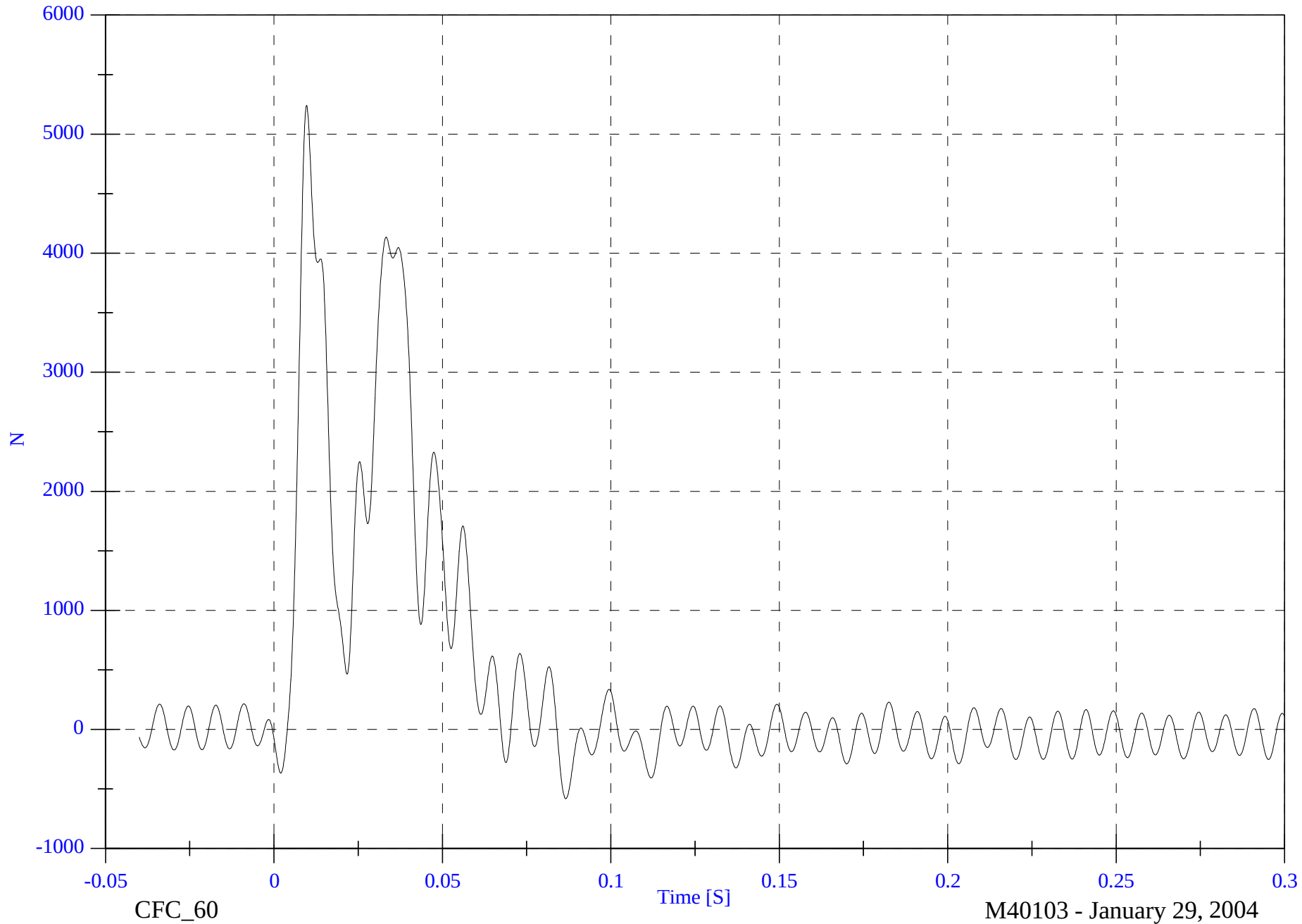
Barrier Load Cell D6 Fx

Max: 5242.8 [N] at 0.010 [S]

Min: -581.8 [N] at 0.087 [S]

B-175

8642-NCAP-42



2004 NCAP Test 6 2004 Chevrolet Colorado

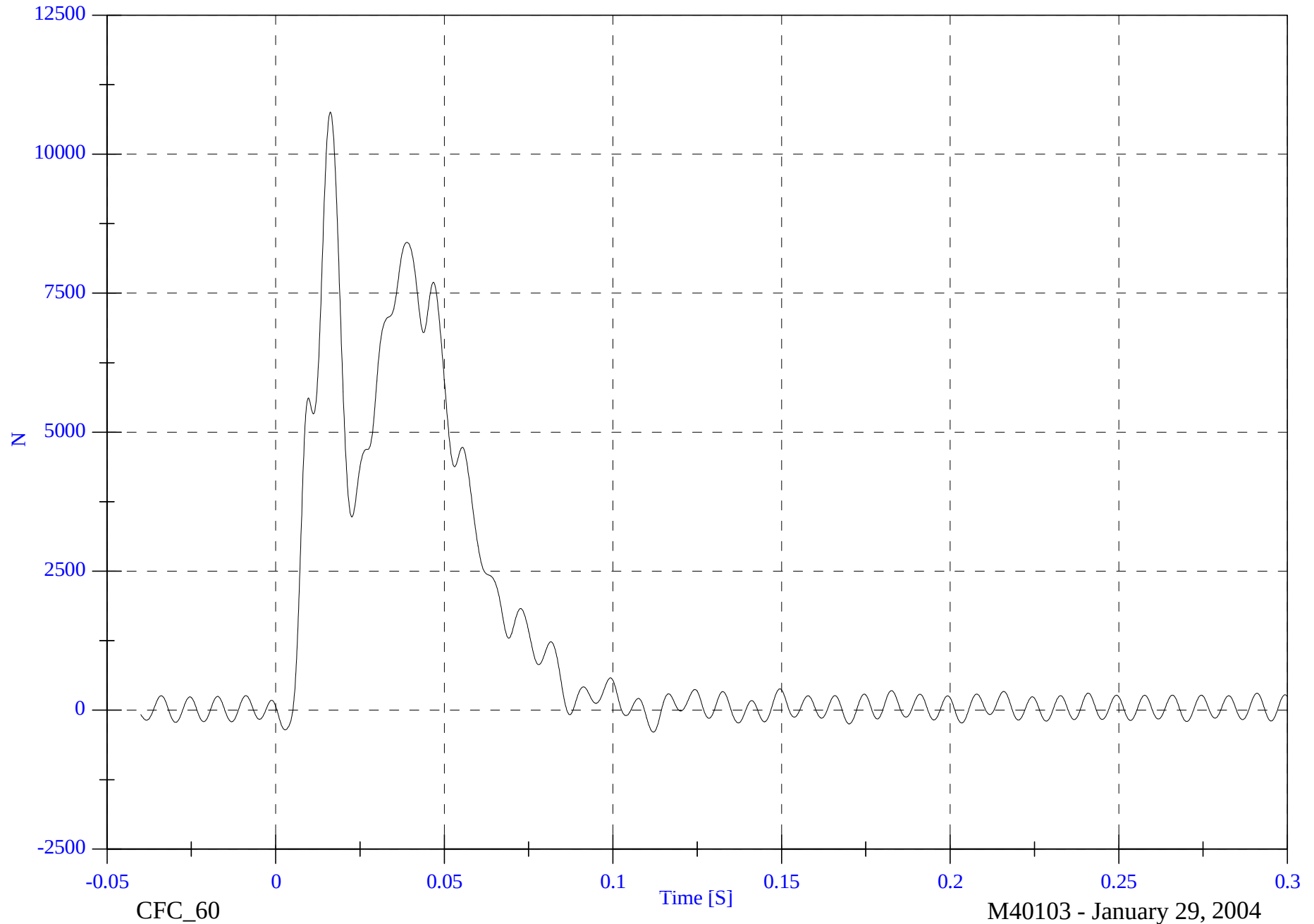
Barrier Load Cell D7 Fx

Max: 10755.7 [N] at 0.016 [S]

Min: -394.4 [N] at 0.112 [S]

B-176

8642-NCAP-42

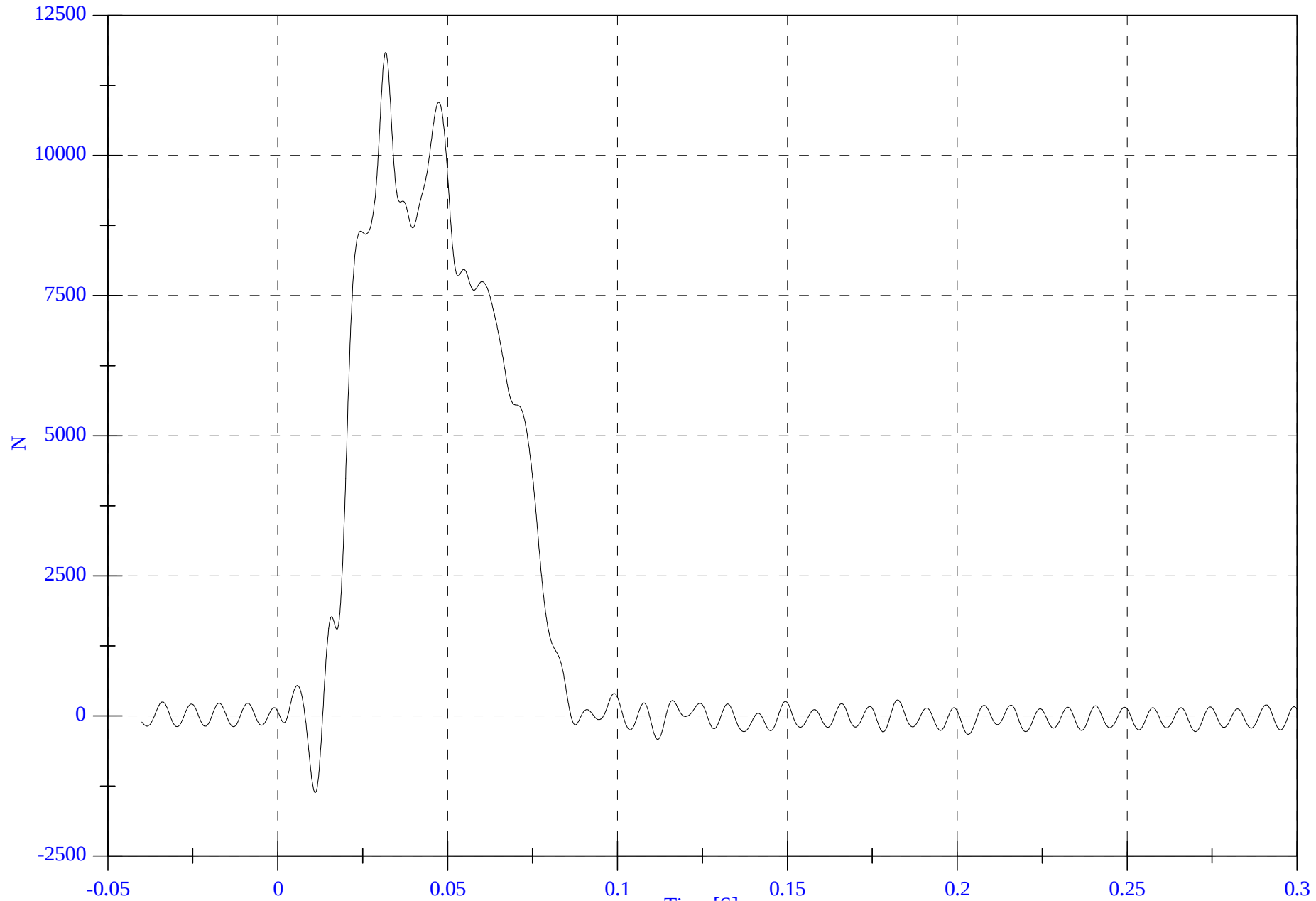


2004 NCAP Test 6 2004 Chevrolet Colorado

Barrier Load Cell D8 Fx

Max: 11840.8 [N] at 0.032 [S]

Min: -1369.2 [N] at 0.011 [S]



B-177

8642-NCAP-42

CFC_60

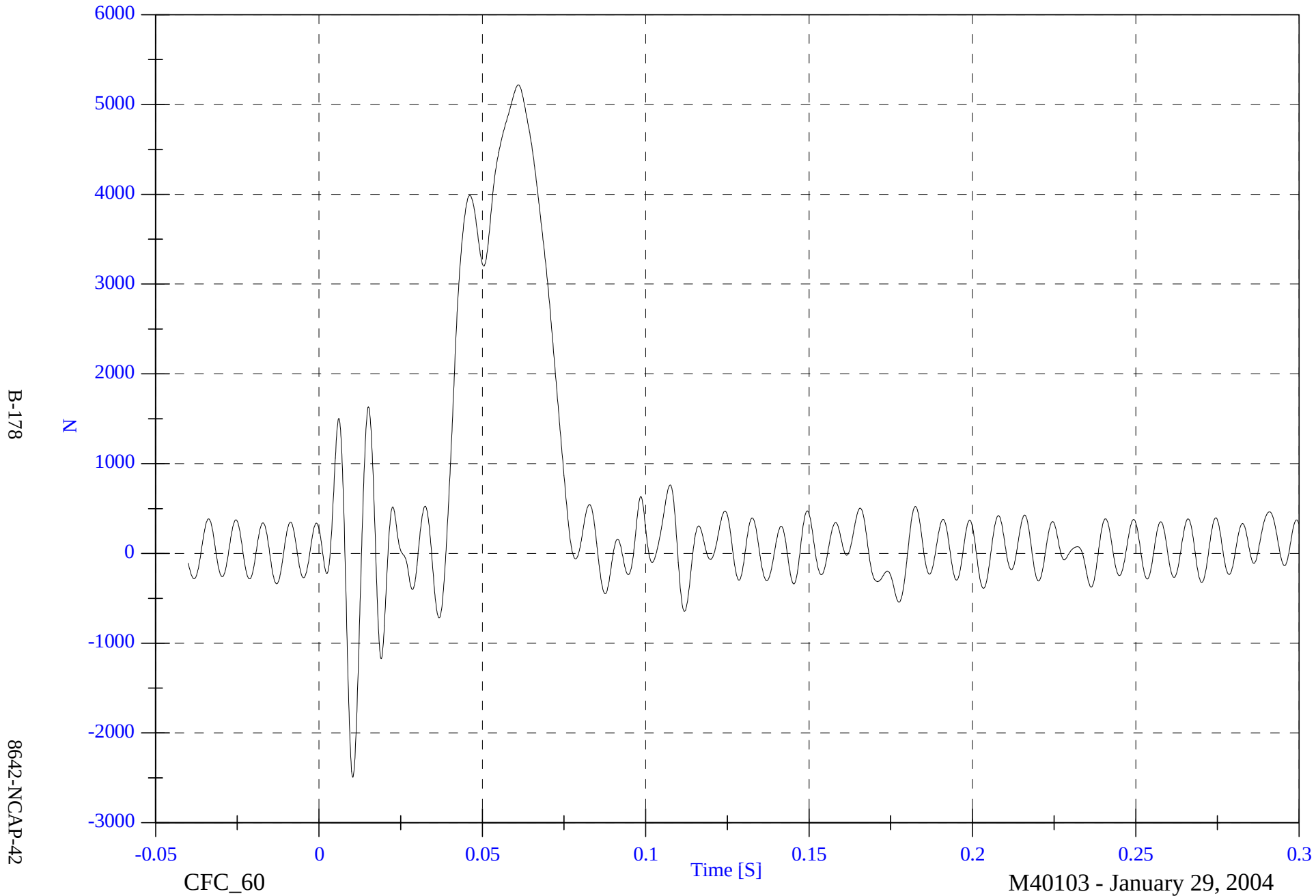
M40103 - January 29, 2004

2004 NCAP Test 6 2004 Chevrolet Colorado

Barrier Load Cell D9 Fx

Max: 5219.0 [N] at 0.061 [S]

Min: -2492.4 [N] at 0.010 [S]

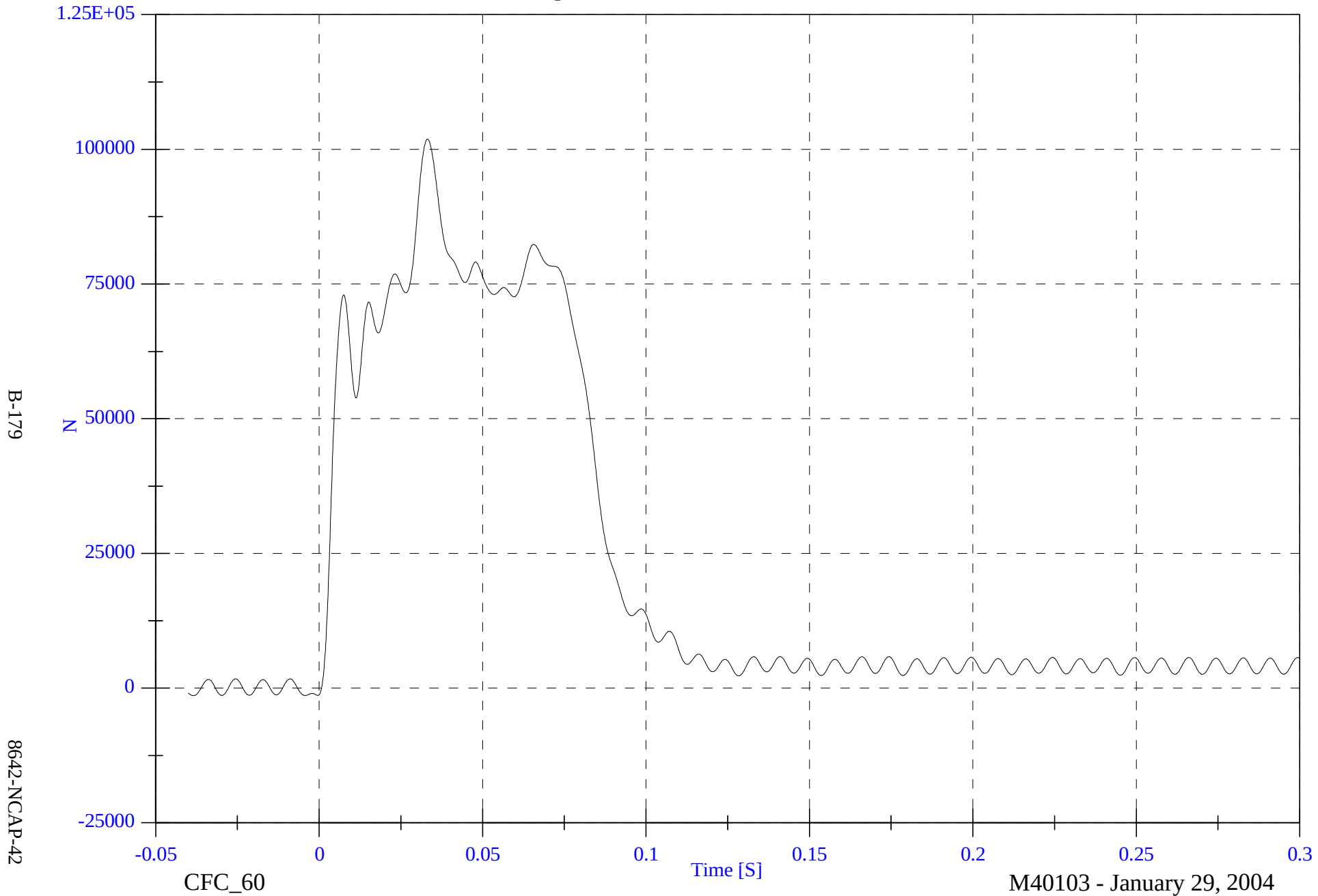


2004 NCAP Test 6 2004 Chevrolet Colorado

Max: 101903.1 [N] at 0.033 [S]

Group 1 Load Cell Sum (A1,A2,A3,B1,B2,B3)

Min: -1399.0 [N] at -0.039 [S]

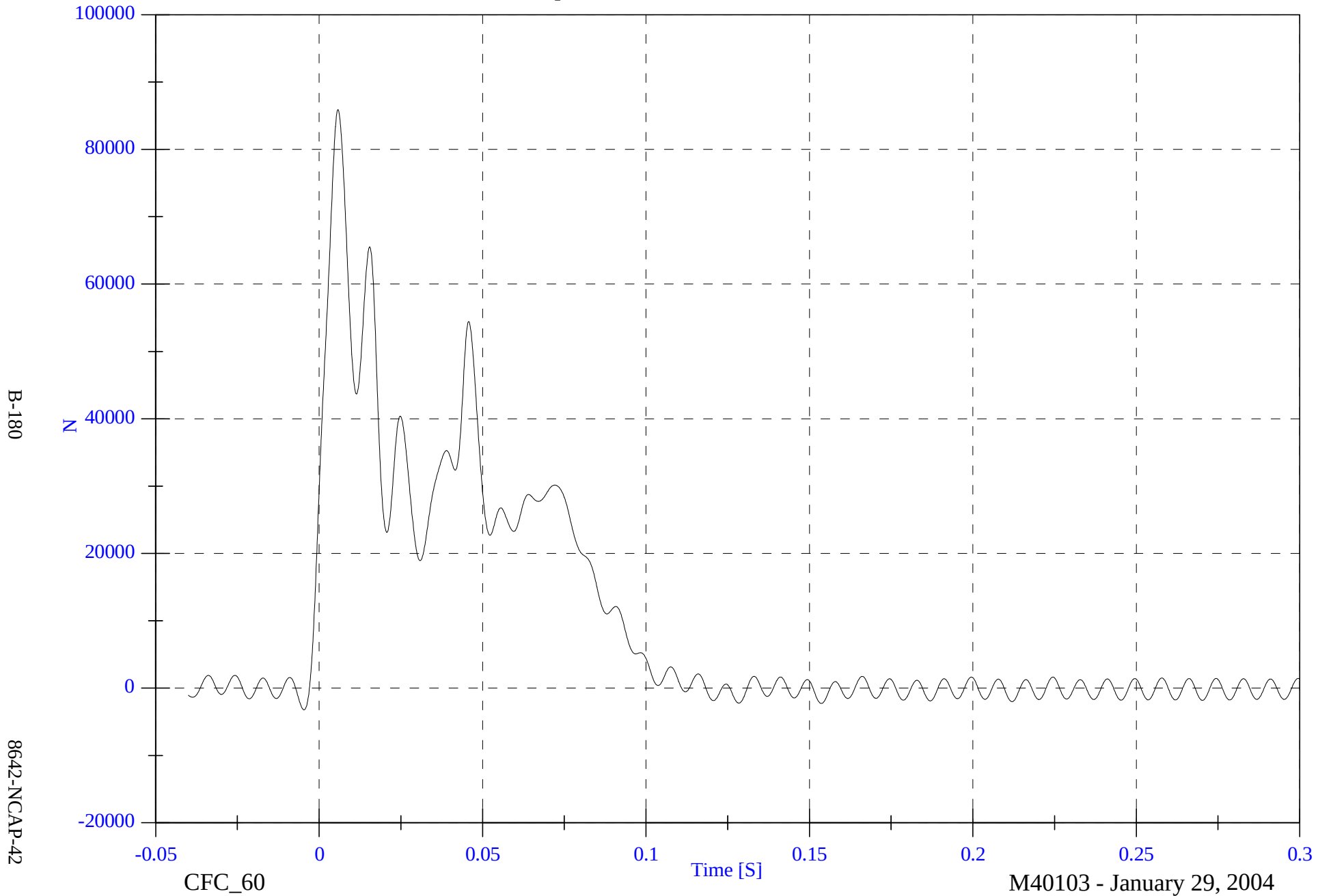


2004 NCAP Test 6 2004 Chevrolet Colorado

Group 2 Load Cell Sum (A4,A5,A6,B4,B5,B6)

Max: 85909.5 [N] at 0.006 [S]

Min: -3223.2 [N] at -0.005 [S]

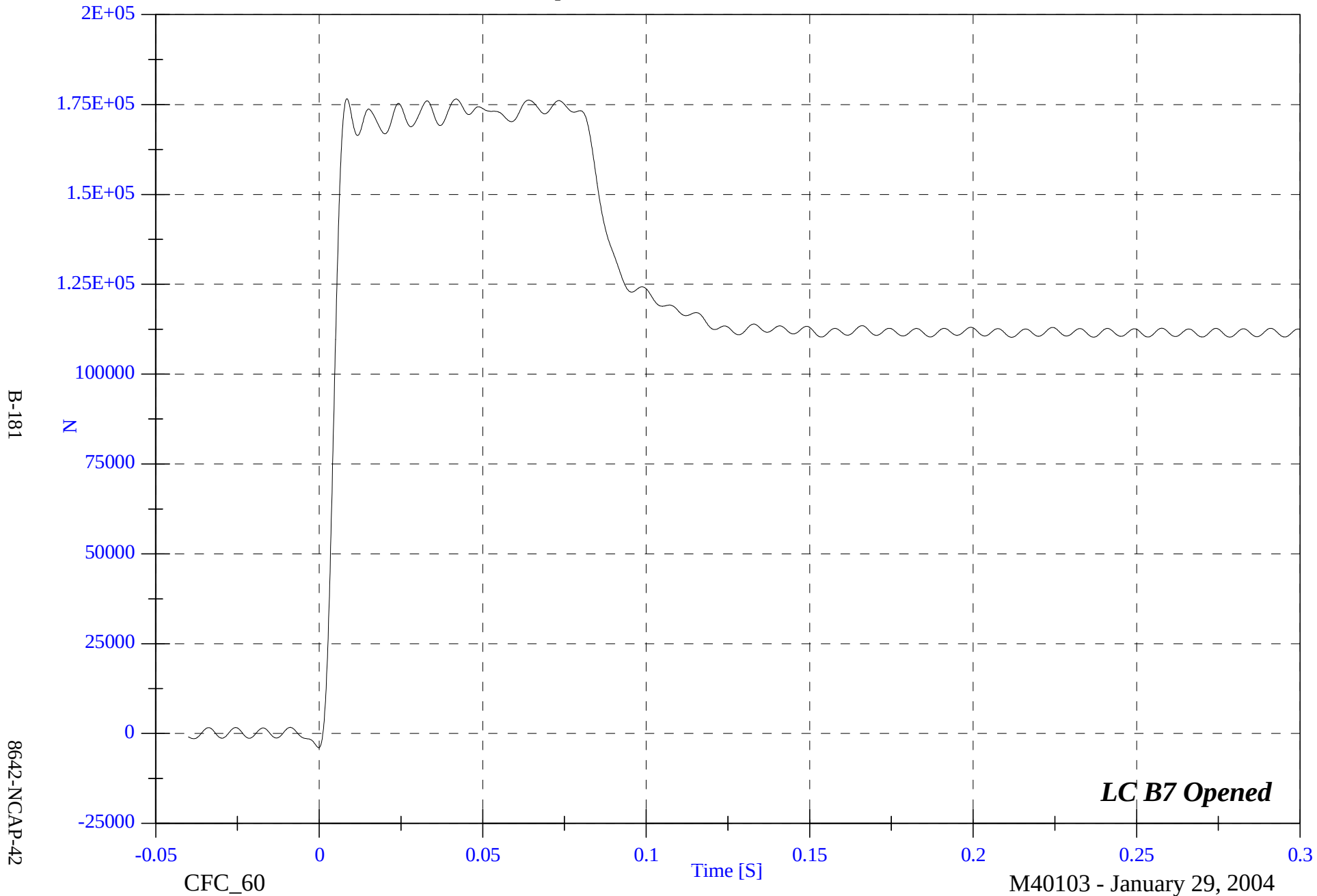


2004 NCAP Test 6 2004 Chevrolet Colorado

Group 3 Load Cell Sum (A7,A8,A9,B7,B8,B9)

Max: 176638.4 [N] at 0.008 [S]

Min: -3928.9 [N] at -0.000 [S]

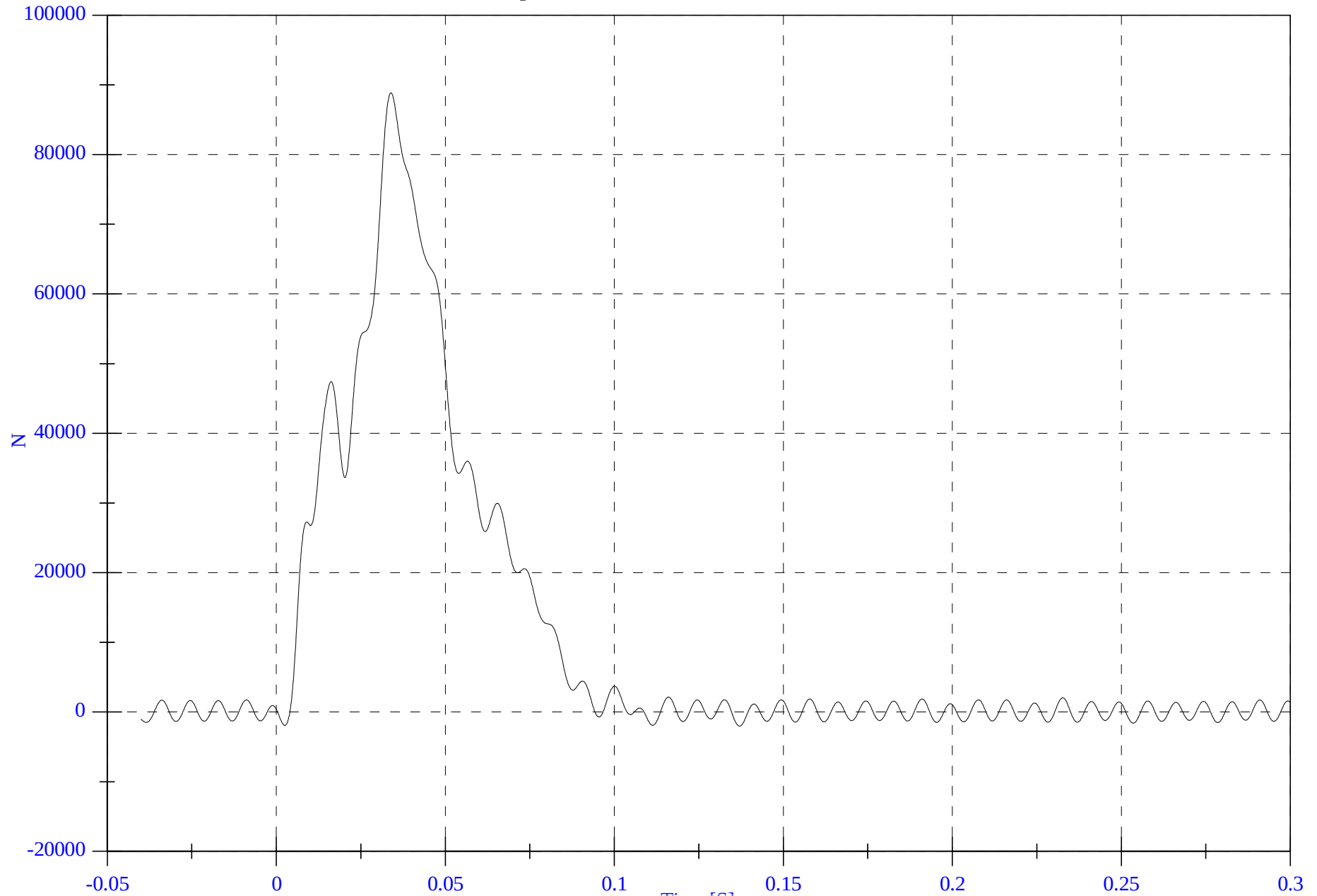


2004 NCAP Test 6 2004 Chevrolet Colorado

Group 4 Load Cell Sum (C1,C2,C3,D1,D2,D3)

Max: 88869.1 [N] at 0.034 [S]

Min: -2021.9 [N] at 0.137 [S]



B-182

8642-NCAP-42

CFC_60

Time [S]

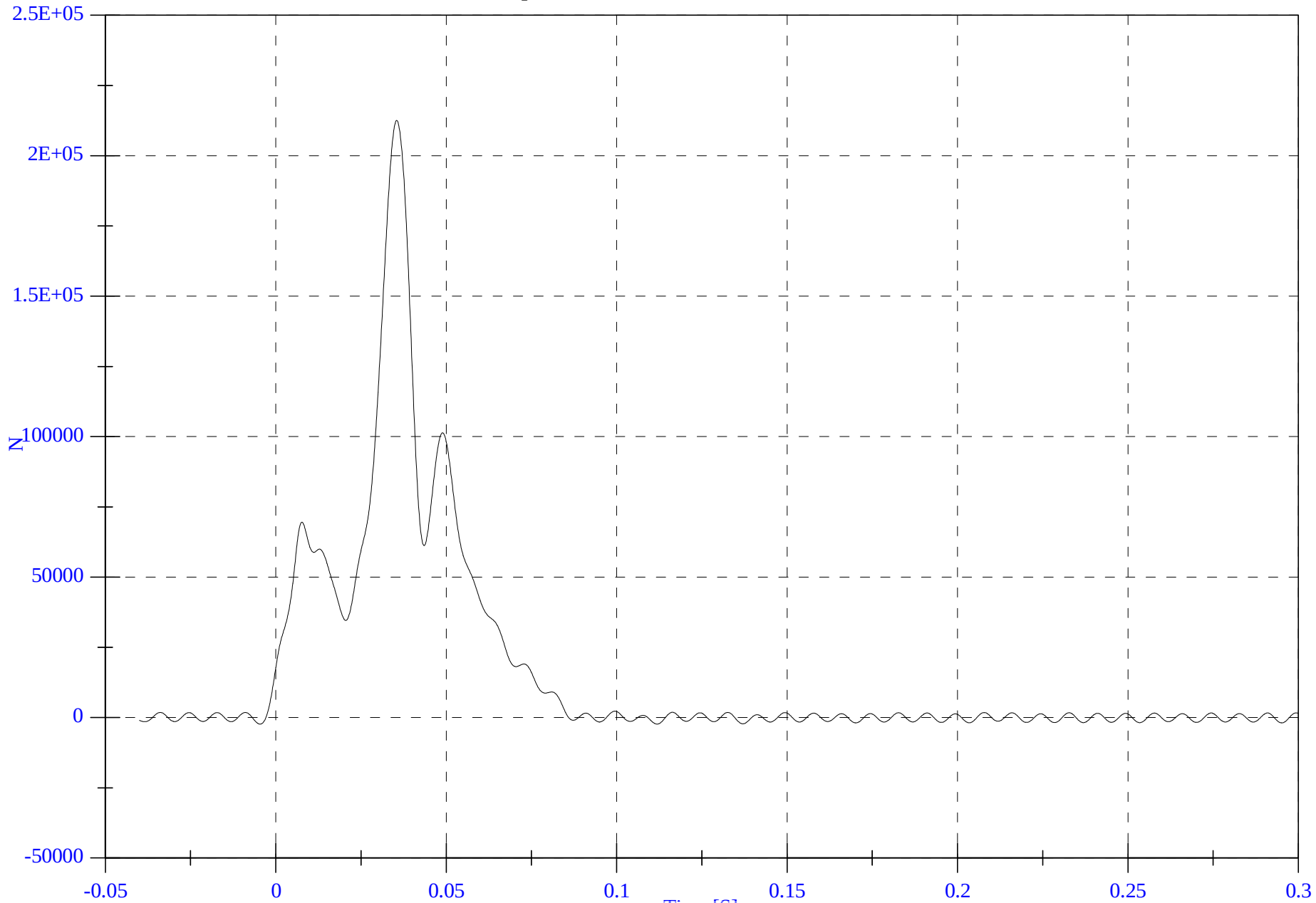
M40103 - January 29, 2004

2004 NCAP Test 6 2004 Chevrolet Colorado

Group 5 Load Cell Sum (C4,C5,C6,D4,D5,D6)

Max: 212600.3 [N] at 0.035 [S]

Min: -2330.8 [N] at -0.005 [S]



B-183

8642-NCAP-42

CFC_60

Time [S]

M40103 - January 29, 2004

2004 NCAP Test 6 2004 Chevrolet Colorado

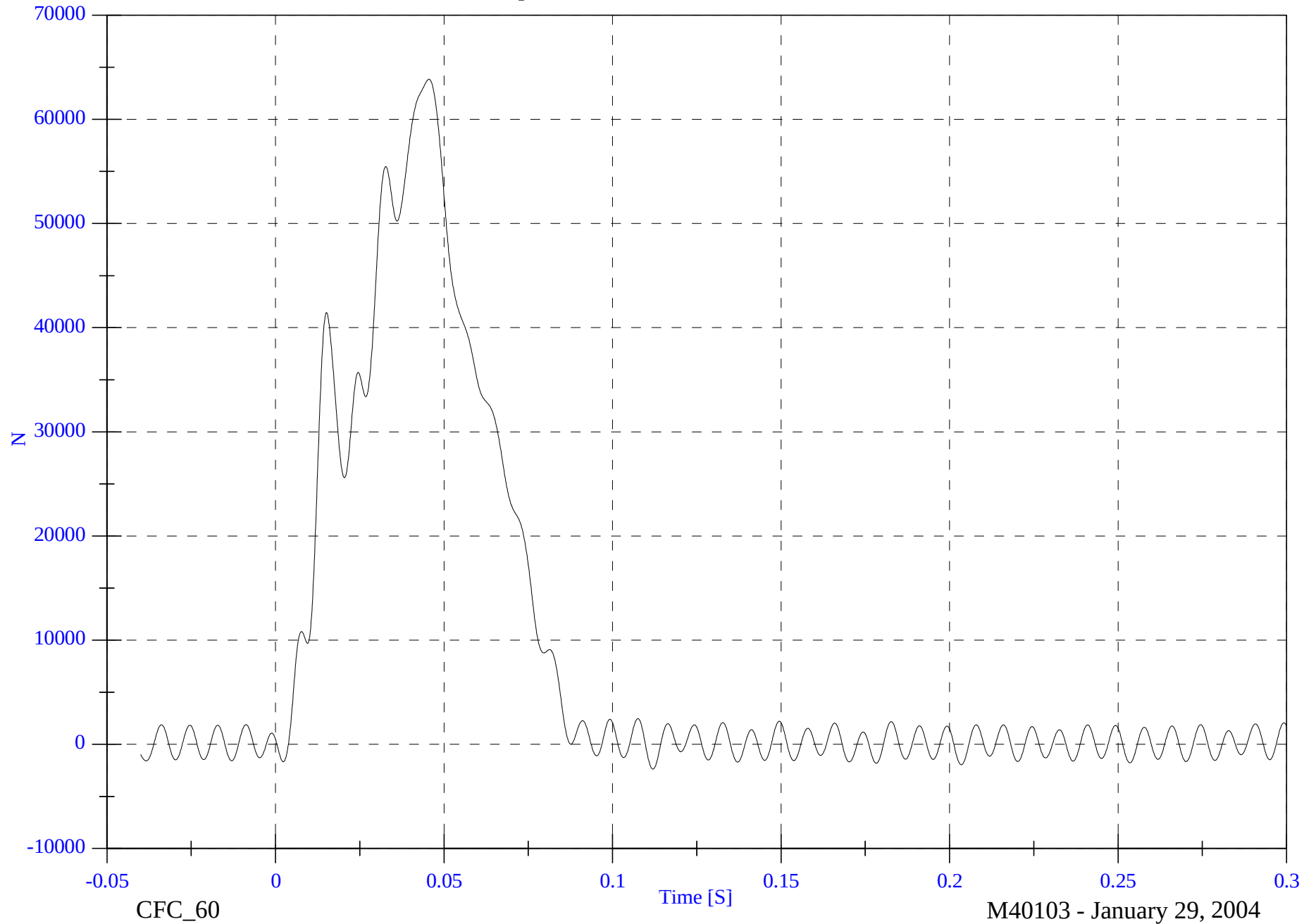
Group 6 Load Cell Sum (C7,C8,C9,D7,D8,D9)

Max: 63849.2 [N] at 0.045 [S]

Min: -2376.3 [N] at 0.112 [S]

B-184

8642-NCAP-42

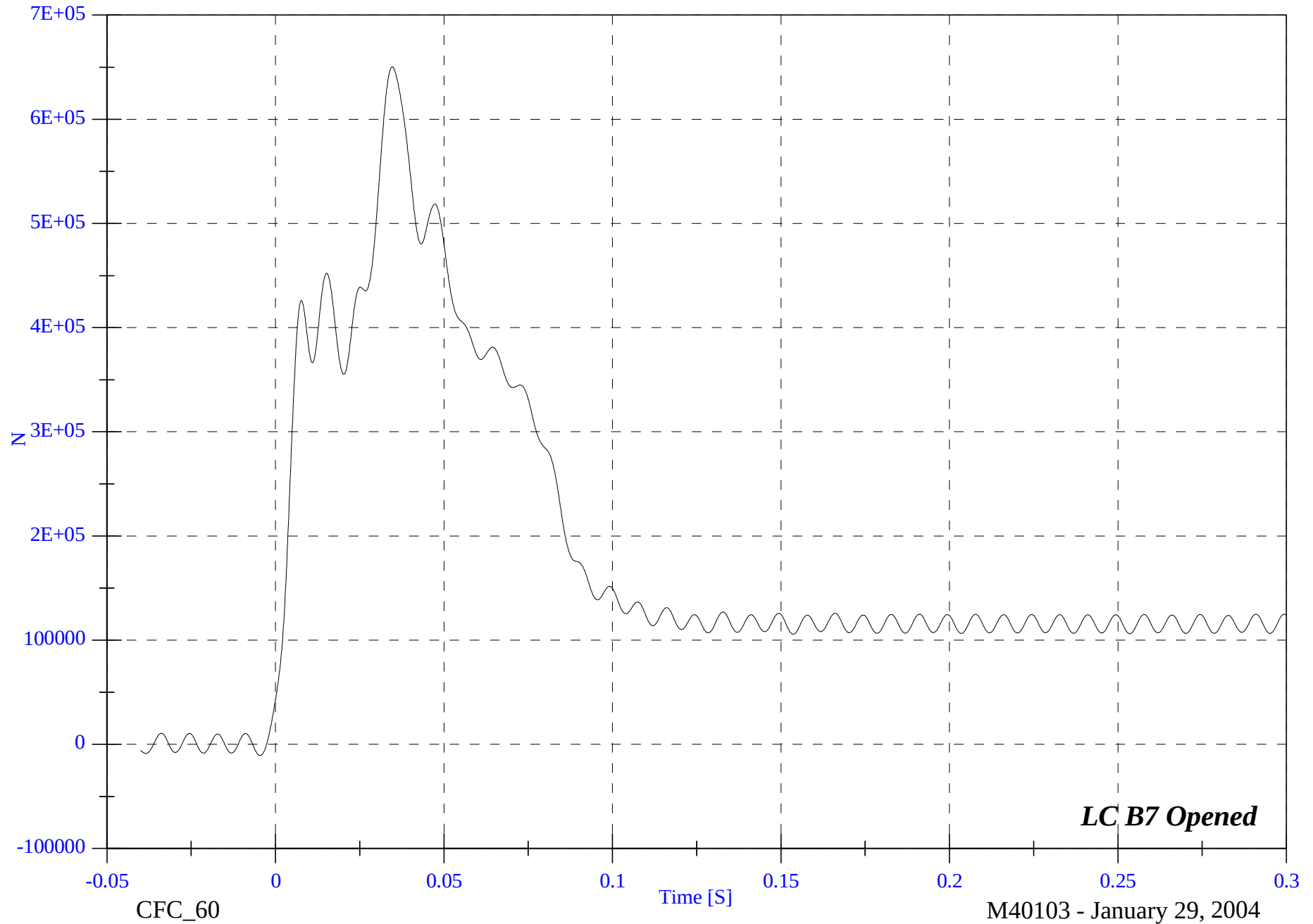


2004 NCAP Test 6 2004 Chevrolet Colorado

Max: 650429.8 [N] at 0.035 [S]

Total Load Cell Sum (All 6 Groups)

Min: -10745.3 [N] at -0.005 [S]



APPENDIX C

PART 572B/E DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA SHEETS

Appendix C contains the results from certification tests performed on the 50th percentile male anthropomorphic test devices utilized for this crash test. The results indicate that the dummies meet all of the performance requirements of the six standard tests as specified in 49 CFR Part 572, Federal Register, Volume 42, No. 25, dated February 7, 1977.

The tests were conducted at the Dummy Certification Test Facility of General Dynamics . A summary of the test results, and Part 572 specifications are included in this Appendix.

Dummy serial numbers and certification dates are:

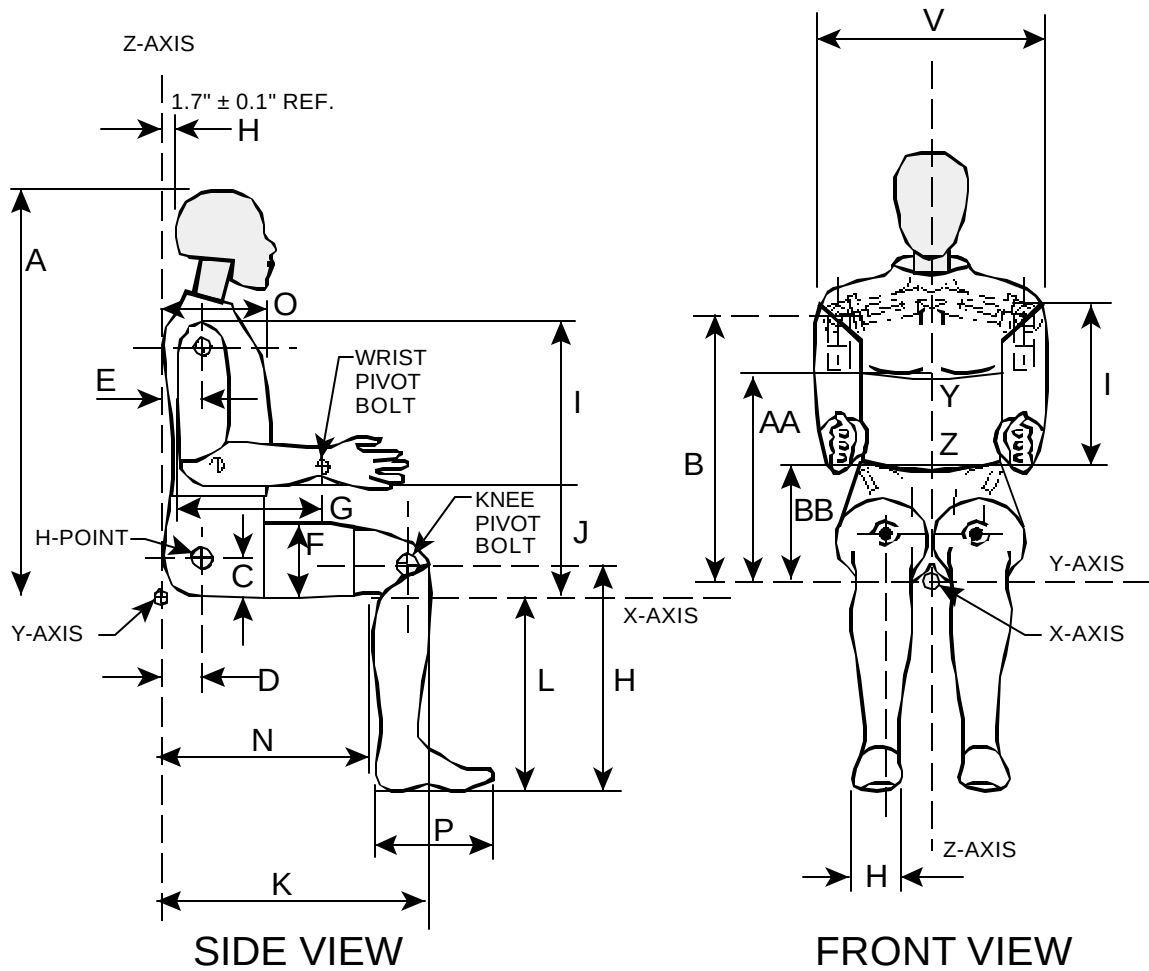
<u>Position No./Location</u>	<u>Serial No.</u>	<u>Completion Date</u>
#1/Driver	061	1/9/2004
#2/Right Front Passenger	064	1/9/2004

Electronic Test Equipment

The complement of signal conditioning, recording and display equipment, in conjunction with dummy certification testing, can be found in New Car Assessment and Standards Indicant Testing Final Report No. 6525-V-1.

DUMMY CONFIGURATION DIMENSIONS

EXTERNAL DIMENSIONS SPECIFICATIONS



NOTE: Figure is referenced to the erect seated position. The curved lumbar does not allow the Hybrid III to be positioned in a perfect erect attitude.
(REF: S572.31(A)(6))

PART 572E
HEAD DROP TEST

Dummy Serial Number 061
Sequential Test Number 1
Date 01-07-04
Workfile 061H 01-07-04

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	66-78 Deg F	70.0
Relative Humidity	10% - 70%	35.0
Peak Resultant Acceleration	225-275 G's	273.83
Peak Lateral Acceleration	15 G's Max	12.42
Is Acceleration Curve Unimodal?	YES	YES

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
NECK FLEXION TEST

Dummy Serial Number	061	
Sequential Test Number	1	
Date	01-08-04	6 Axis Neck Transducer
Workfile	061NF1 01-08-04	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		20.6-22.2 Deg C	21.11
Relative Humidity		10% - 70%	37.0
Impact Velocity		6.89 - 7.13 m/s	6.96
Pendulum Deceleration	10 ms	22.50 - 27.50 G's	22.92
	20 ms	17.60 - 22.60 G's	22.28
	30 ms	12.50 - 18.50 G's	16.01
Max Pendulum G's Above 30 ms		29 G's Max	16.01
Deceleration - Time Curve Decay Time to 5 G's		34 - 42 ms	41.90
D Plane Rotation	Max	64 - 78 Deg	65.59
	Time	57 - 64 ms	49.54
Moment About Occipital Condyle	Max	88.13 – 108.47 N-m	104.89
	Time	47 - 58 ms	53.40
Rotation Angle - Time Curve Decay Time to Zero		113 - 128 ms	115.0
Positive Moment - Time Curve Decay Time to Zero		97 - 107 ms	100.7

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
NECK EXTENSION TEST

Dummy Serial Number	061	
Sequential Test Number	3	
Date	01-08-04	6 Axis Neck Transducer
Workfile	061NE3 01-08-04	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		20.6 – 22.2 Deg C	21.11
Relative Humidity		10% - 70%	37.00
Impact Velocity		5.94 – 6.19 m/s	5.99
Pendulum Deceleration	10 ms	17.20 - 21.20 G's	17.23
	20 ms	14.00 - 19.00 G's	15.23
	30 ms	11.00 - 16.00 G's	11.98
Max Pendulum G's Above 30 ms		22 G's Max	12.01
Deceleration - Time Curve Decay Time to 5 G's		38 - 46 ms	45.60
D Plane Rotation	Max	81 - 106 Deg	88.13
	Time	72 - 82 ms	77.10
Moment About Occipital Condyle	Max	-79.99 - -52.88 N-m	-61.68
	Time	65 - 79 ms	73.80
Rotation Angle - Time Curve Decay Time to Zero		147 - 174 ms	155.40
Positive Moment - Time Curve Decay Time to Zero		120 - 148 ms	138.30

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
THORAX IMPACT TEST

Dummy Serial Number 061
Sequential Test Number 1
Date 01-08-04
Workfile 061T 01-08-04

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	69-72 Deg F	70.0
Relative Humidity	10% - 70%	37.0
Pendulum Velocity	21.6 - 22.4 Ft/s	22.06
Maximum Deflection	2.50 - 2.86 in	2.51
Maximum Resistive Force	1160 - 1325 Lbs	1315.38
Internal Hysteresis	69 - 85 %	76.30

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
KNEE IMPACT TEST

Dummy Serial Number 061
Sequential Test Number 1
Date 01-09-04
Workfile 061LF 01-09-04/061RF 01-09-04

TEST PARAMETER	SPECIFICATION	TEST RESULTS
LEFT KNEE		
Temperature	66 - 78 Deg F	70.0
Relative Humidity	10% - 70%	34.0
Probe Velocity	6.8 - 7.0 Ft/s	7.00
Peak Knee Impact Force	1060 - 1300 Lbs	1170.41
RIGHT KNEE		
Temperature	66 - 78 Deg F	70.0
Relative Humidity	10% - 70%	34.0
Probe Velocity	6.8 - 7.0 Ft/s	7.00
Peak Knee Impact Force	1060 - 1300 Lbs	1164.39

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
EXTERNAL DIMENSIONS

Dummy Serial Number 061
Sequential Test Number 1
Date 01-09-04

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature			70.0
Relative Humidity			34.0
Location for Chest Circumference	AA	16.9 - 17.1 in	17.0
Location for Waist Circumference	BB	8.9 - 9.1 in	9.0
Chest Circumference (With Jacket)	Y	38.2 - 39.4 in	38.9
Waist Circumference	Z	32.9 - 34.1 in	33.5
Chest Depth	O	8.4 - 9.0 in	8.5
H-Point Height	C	3.3 - 3.5 in	3.5
H-Point from Backline	D	5.3 - 5.5 in	5.3
Skull Cap to Backline	H	1.6 - 1.8 in	1.7
Total Sitting Height	A	34.6 - 35.0 in	34.6
Thigh Clearance	F	5.5 - 6.1 in	6.1
Buttock Knee Length	K	22.8 - 23.8 in	23.7
Buttock Popliteal Length	N	17.8 - 18.8 in	18.0
Popliteal Height	L	16.9 - 17.9 in	17.3
Knee Pivot Height	M	19.1 - 19.7 in	19.3
Foot Length	P	9.9 - 10.5 in	10.3
Foot Breadth	W	3.6 - 4.2 in	14.6
Shoulder Pivot from Backline	E	3.3 - 3.7 in	3.4
Shoulder Breadth	V	16.6 - 17.2 in	16.5
Shoulder Pivot Height	B	19.9 - 20.5 in	20.1
Elbow Rest Height	J	7.5 - 8.3 in	8.3
Shoulder - Elbow Length	I	13.0 - 13.6 in	13.1
Back of Elbow to Wrist Pivot	G	11.4 - 12.0 in	11.6

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
HEAD DROP TEST

Dummy Serial Number 064
Sequential Test Number 1
Date 01-07-04
Workfile 064H1 01-07-04

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	66-78 Deg F	70.0
Relative Humidity	10% - 70%	34.0
Peak Resultant Acceleration	225-275 G's	245.44
Peak Lateral Acceleration	15 G's Max	14.99
Is Acceleration Curve Unimodal?	YES	YES

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
NECK FLEXION TEST

Dummy Serial Number	064	
Sequential Test Number	1	
Date	01-08-04	6 Axis Neck Transducer
Workfile	064NF1 01-08-04	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		20.6 - 22.22 Deg C	21.11
Relative Humidity		10% - 70%	37.00
Impact Velocity		6.89 – 7.13 m/s	7.04
Pendulum Deceleration	10 ms	22.50 - 27.50 G's	23.40
	20 ms	17.60 - 22.60 G's	20.16
	30 ms	12.50 - 18.50 G's	13.96
Max Pendulum G's Above 30 ms		29 G's Max	13.96
Deceleration - Time Curve Decay Time to 5 G's		34 - 42 ms	39.00
D Plane Rotation	Max	64 - 78 Deg	64.38
	Time	57 - 64 ms	57.30
Moment About Occipital Condyle	Max	88.13 – 108.47 N-m	106.31
	Time	47 - 58 ms	52.80
Rotation Angle - Time Curve Decay Time to Zero		113 - 128 ms	116.80
Positive Moment - Time Curve Decay Time to Zero		97 - 107 ms	101.20

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
NECK EXTENSION TEST

Dummy Serial Number	064	
Sequential Test Number	1	
Date	01-08-04	6 Axis Neck Transducer
Workfile	064NE 01-08-04	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		20.6 – 22.2 Deg C	21.11
Relative Humidity		10% - 70%	37.00
Impact Velocity		5.94 – 6.19 m/s	5.99
Pendulum Deceleration	10 ms	17.20 - 21.20 G's	20.90
	20 ms	14.00 - 19.00 G's	18.43
	30 ms	11.00 - 16.00 G's	13.85
Max Pendulum G's Above 30 ms		22 G's Max	13.85
Deceleration - Time Curve Decay Time to 5 G's		38 - 46 ms	38.10
D Plane Rotation	Max	81 - 106 Deg	94.99
	Time	72 - 82 ms	74.70
Moment About Occipital Condyle	Max	-79.99 - -52.88 N-m	-74.94
	Time	65 - 79 ms	69.70
Rotation Angle - Time Curve Decay Time to Zero		147 - 174 ms	153.90
Positive Moment - Time Curve Decay Time to Zero		120 - 148 ms	132.80

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
THORAX IMPACT TEST

Dummy Serial Number 064
Sequential Test Number 1
Date 01-09-04
Workfile 064T 01-09-04

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	69-72 Deg F	70.0
Relative Humidity	10% - 70%	33.0
Pendulum Velocity	21.6 - 22.4 Ft/s	22.33
Maximum Deflection	2.50 - 2.86 in	2.53
Maximum Resistive Force	1160 - 1325 Lbs	1320.11
Internal Hysteresis	69 - 85 %	75.30

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
KNEE IMPACT TEST

Dummy Serial Number 064
Sequential Test Number 1
Date 01-09-04
Workfile 064LF 01-09-04/064RF 01-09-04

TEST PARAMETER	SPECIFICATION	TEST RESULTS
LEFT KNEE		
Temperature	66 - 78 Deg F	70.0
Relative Humidity	10% - 70%	34.00
Probe Velocity	6.8 - 7.0 Ft/s	7.00
Peak Knee Impact Force	1060 - 1300 Lbs	1142.42
RIGHT KNEE		
Temperature	66 - 78 Deg F	70.0
Relative Humidity	10% - 70%	34.00
Probe Velocity	6.8 - 7.0 Ft/s	7.00
Peak Knee Impact Force	1060 - 1300 Lbs	1130.84

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
EXTERNAL DIMENSIONS

Dummy Serial Number 064
Sequential Test Number 1
Date 01-09-2004

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature			70.00
Relative Humidity			34.00
Location for Chest Circumference	AA	16.9 - 17.1 in	17.0
Location for Waist Circumference	BB	8.9 - 9.1 in	9.0
Chest Circumference (With Jacket)	Y	38.2 - 39.4 in	38.9
Waist Circumference	Z	32.9 - 34.1 in	33.7
Chest Depth	O	8.4 - 9.0 in	8.9
H-Point Height	C	3.3 - 3.5 in	3.5
H-Point from Backline	D	5.3 - 5.5 in	5.4
Skull Cap to Backline	H	1.6 - 1.8 in	1.7
Total Sitting Height	A	34.6 - 35.0 in	34.6
Thigh Clearance	F	5.5 - 6.1 in	5.9
Buttock Knee Length	K	22.8 - 23.8 in	23.0
Buttock Popliteal Length	N	17.8 - 18.8 in	18.5
Popliteal Height	L	16.9 - 17.9 in	17.5
Knee Pivot Height	M	19.1 - 19.7 in	19.4
Foot Length	P	9.9 - 10.5 in	10.1
Foot Breadth	W	3.6 - 4.2 in	14.2
Shoulder Pivot from Backline	E	3.3 - 3.7 in	3.5
Shoulder Breadth	V	16.6 - 17.2 in	16.6
Shoulder Pivot Height	B	19.9 - 20.5 in	20.2
Elbow Rest Height	J	7.5 - 8.3 in	8.2
Shoulder - Elbow Length	I	13.0 - 13.6 in	13.5
Back of Elbow to Wrist Pivot	G	11.4 - 12.0 in	11.5

Remarks:

Laboratory Technician:

B. Swiecicki

APPENDIX D

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENT CALIBRATION FOR DRIVER DUMMY
(Six Month Calibration Minimum)

DRIVER DUMMY (S/N 061)		Manufacturer	Serial #	Calibration	
				Last	Next
Head 9 Array	X Arm Y	ENDEVCO	AC-P21399	6-Nov-03	6-May-04
	X Arm Z	ENDEVCO	AC-P23282	11-Nov-03	11-May-04
	Y Arm X	ENDEVCO	AC-P23155	11-Nov-03	11-May-04
	Y Arm Z	ENDEVCO	AC-P23358	6-Nov-03	6-May-04
	Z Arm X	ENDEVCO	AC-P18731	11-Nov-03	11-May-04
	Z Arm Y	ENDEVCO	AC-P19217	26-Nov-03	26-May-04
Head	X	ENDEVCO	AC-P18516	11-Nov-03	11-May-04
	Y	ENDEVCO	AC-P19222	11-Nov-03	11-May-04
	Z	ENDEVCO	AC-P18558	26-Nov-03	26-May-04
Head	X (R)	ENDEVCO	AC-P18663	11-Nov-03	11-May-04
	Y (R)	ENDEVCO	AC-P18639	11-Nov-03	11-May-04
	Z (R)	ENDEVCO	AC-P18537	11-Nov-03	11-May-04
Neck Load Cell	X	DENTON	LC-076Fx	24-Sep-03	24-Mar-04
	Y	DENTON	LC-076Fy	24-Sep-03	24-Mar-04
	Z	DENTON	LC-076Fz	24-Sep-03	24-Mar-04
Neck Moment	X	DENTON	LC-076Mx	24-Sep-03	24-Mar-04
	Y	DENTON	LC-076My	24-Sep-03	24-Mar-04
	Z	DENTON	LC-076Mz	24-Sep-03	24-Mar-04
Chest	X	ENDEVCO	AC-P21373	30-Oct-03	30-Apr-04
	Y	ENDEVCO	AC-P22639	30-Oct-03	30-Apr-04
	Z	ENDEVCO	AC-P21297	30-Oct-03	30-Apr-04
Chest	X (R)	ENDEVCO	AC-P21171	30-Oct-03	30-Apr-04
	Y (R)	ENDEVCO	AC-P23136	30-Oct-03	30-Apr-04
	Z (R)	ENDEVCO	AC-P23128	30-Oct-03	30-Apr-04
Chest Deflection	X	SERVO	DS-061	11-Nov-03	11-May-04
Pelvic	X	ENDEVCO	AC-P18792	11-Nov-03	11-May-04
	Y	ENDEVCO	AC-P17535	11-Nov-03	11-May-04
	Z	ENDEVCO	AC-P23134	11-Nov-03	11-May-04

INSTRUMENT CALIBRATION FOR DRIVER DUMMY
(Six Month Calibration Minimum)

DRIVER DUMMY (S/N 061)		Manufacturer	Serial #	Calibration	
				Last	Next
Left Femur Load Cell	Fz	DENTON	LC-231	3-Dec-03	3-Jun-04
Right Femur Load Cell	Fz	DENTON	LC-232	3-Dec-03	3-Jun-04
Left Upper Tibia	Mx	DENTON	LC-038Mx	26-Sep-03	26-Mar-04
	My	DENTON	LC-038My	26-Sep-03	26-Mar-04
Left Lower Tibia	Fz	DENTON	LC-124Fz	26-Sep-03	26-Mar-04
	Mx	DENTON	LC-124Mx	26-Sep-03	26-Mar-04
	My	DENTON	LC-124My	26-Sep-03	26-Mar-04
Right Upper Tibia	Mx	DENTON	LC-023Mx	26-Sep-03	26-Mar-04
	My	DENTON	LC-023My	26-Sep-03	26-Mar-04
Right Lower Tibia	Fz	DENTON	LC-111Fz	26-Sep-03	26-Mar-04
	Mx	DENTON	LC-111Mx	26-Sep-03	26-Mar-04
	My	DENTON	LC-111My	26-Sep-03	26-Mar-04
Left Foot Rear	X	ENTRAN	AC-00L13-F04	14-Nov-03	14-May-04
	Z	ENTRAN	AC-01G18-F15	14-Nov-03	14-May-04
Left Foot Front	Z	ENTRAN	AC-01G18-F14	14-Nov-03	14-May-04
Right Foot Rear	X	ENTRAN	AC-01G18-F05	14-Nov-03	14-May-04
	Z	ENTRAN	AC-01G18-F03	14-Nov-03	14-May-04
Right Foot Front	Z	ENTRAN	AC-01J02-F09	14-Nov-03	14-May-04
Lap Belt Load Cell		First Technology	LC-155	16-Sep-03	16-Mar-04

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY
(Six Month Calibration Minimum)

PASSENGER DUMMY (S/N 064)		Manufacturer	Serial #	Calibration	
				Last	Next
Head 9 Array	X Arm Y	ENDEVCO	AC-P18532	20-Nov-03	20-May-04
	X Arm Z	ENDEVCO	AC-P17237	20-Nov-03	20-May-04
	Y Arm X	ENDEVCO	AC-P16662	20-Nov-03	20-May-04
	Y Arm Z	ENDEVCO	AC-P17299	20-Nov-03	20-May-04
	Z Arm X	ENDEVCO	AC-P21441	20-Nov-03	20-May-04
	Z Arm Y	ENDEVCO	AC-P19197	26-Nov-03	26-May-04
Head	X	ENDEVCO	AC-J32184	3-Nov-03	3-May-04
	Y	ENDEVCO	AC-J32185	30-Oct-03	30-Apr-04
	Z	ENDEVCO	AC-J31011	3-Nov-03	3-May-04
Head	X (R)	ENDEVCO	AC-J31020	3-Nov-03	3-May-04
	Y (R)	ENDEVCO	AC-J31101	3-Nov-03	3-May-04
	Z (R)	ENDEVCO	AC-J31059	3-Nov-03	3-May-04
Neck Load Cell	X	DENTON	LC-441Fx	25-Sep-03	25-Mar-04
	Y	DENTON	LC-441Fy	25-Sep-03	25-Mar-04
	Z	DENTON	LC-441Fz	25-Sep-03	25-Mar-04
Neck Moment	X	DENTON	LC-441Mx	25-Sep-03	25-Mar-04
	Y	DENTON	LC-441My	25-Sep-03	25-Mar-04
	Z	DENTON	LC-441Mz	25-Sep-03	25-Mar-04
Chest	X	ENDEVCO	AC-P18948	21-Nov-03	21-May-04
	Y	ENDEVCO	AC-J33018	3-Nov-03	3-May-04
	Z	ENDEVCO	AC-J32783	3-Nov-03	3-May-04
Chest	X (R)	ENDEVCO	AC-J31066	3-Nov-03	3-May-04
	Y (R)	ENDEVCO	AC-P16979	3-Nov-03	3-May-04
	Z (R)	ENDEVCO	AC-J31022	3-Nov-03	3-May-04
Chest Deflection	X	SERVO	DS-064	20-Nov-03	20-May-04
Pelvic	X	ENDEVCO	AC-P23174	30-Oct-03	30-Apr-04
	Y	ENDEVCO	AC-P23164	30-Oct-03	30-Apr-04
	Z	ENDEVCO	AC-P23137	30-Oct-03	30-Apr-04

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY
(Six Month Calibration Minimum)

PASSENGER DUMMY (S/N 064)		Manufacturer	Serial #	Calibration	
				Last	Next
Left Femur Load Cell	Fz	GSE	LC-723	3-Dec-03	3-Jun-04
Right Femur Load Cell	Fz	GSE	LC-955	3-Dec-03	3-Jun-04
Left Upper Tibia	Mx	DENTON	LC-045Mx	26-Sep-03	26-Mar-04
	My	DENTON	LC-045My	26-Sep-03	26-Mar-04
Left Lower Tibia	Fz	DENTON	LC-125Fz	26-Sep-03	26-Mar-04
	Mx	DENTON	LC-125Mx	26-Sep-03	26-Mar-04
	My	DENTON	LC-125My	26-Sep-03	26-Mar-04
Right Upper Tibia	Mx	DENTON	LC-016Mx	26-Sep-03	26-Mar-04
	My	DENTON	LC-016My	26-Sep-03	26-Mar-04
Right Lower Tibia	Fz	DENTON	LC-123Fz	26-Sep-03	26-Mar-04
	Mx	DENTON	LC-123Mx	26-Sep-03	26-Mar-04
	My	DENTON	LC-123My	26-Sep-03	26-Mar-04
Left Foot Rear	X	ENDEVCO	AC-J18059	4-Dec-03	4-Jun-04
	Z	ENDEVCO	AC-J36176	4-Dec-03	4-Jun-04
Left Foot Front	Z	ENDEVCO	AC-J18662	4-Dec-03	4-Jun-04
Right Foot Rear	X	ENDEVCO	AC-AJ8C0	4-Dec-03	4-Jun-04
	Z	ENDEVCO	AC-J19868	4-Dec-03	4-Jun-04
Right Foot Front	Z	ENDEVCO	AC-J34378	4-Dec-03	4-Jun-04
Lap Belt Load Cell		First Technology	LC-173	10-Oct-03	10-Apr-04

INSTRUMENT CALIBRATION FOR VEHICLE ACCELEROMETERS
(Six Month Calibration Minimum)

	Manufacturer	Serial #	Calibration	
			Last	Next
Left Seat Rear Crossmember X	GS SENSORS	AC-9440-023	3-Dec-03	3-Jun-04
Right Rear Seat Crossmember X	GS SENSORS	AC-9444-038	3-Dec-03	3-Jun-04
Top of Engine	GS SENSORS	AC-9440-036	3-Dec-03	3-Jun-04
Bottom of Engine	ICS	AC-9026-042	19-Jan-04	19-Jan-04
Right Disc Brake Caliper	ICS	AC-8084-045	11-Dec-03	11-Jun-04
Instrument Panel	GS SENSORS	AC-9440-032	19-Jan-04	19-Jan-04
Left Disc Brake Caliper	ICS	AC-8084-024	11-Dec-03	11-Jun-04
Left Seat Rear Crossmember Z	GS SENSORS	AC-9440-046	3-Dec-03	3-Jun-04
Right Seat Rear Crossmember Z	GS SENSORS	AC-9440-029	3-Dec-03	3-Jun-04

REPORT NUMBER: CAL-04-06

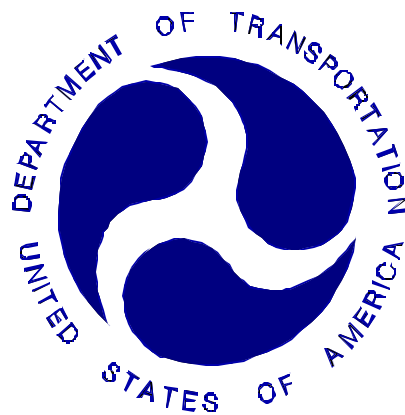
NEW CAR ASSESSMENT PROGRAM (NCAP)
FRONTAL BARRIER IMPACT TEST

EVENFLO VANGUARD 5 WITH LATCH AND TOP TETHER
EVENFLO VANGUARD TITAN OVERHEAD SHIELD WITH LATCH AND TOP TETHER

NHTSA NUMBER: M40103

GENERAL DYNAMICS REPORT NUMBER: 8642-NCAP-42

GENERAL DYNAMICS
ADVANCED INFORMATION ENGINEERING SERVICES
TRANSPORTATION SCIENCES CENTER
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BUFFALO, NEW YORK 14225



January 29, 2004

FINAL REPORT

U. S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Rulemaking
Office of Crashworthiness Standards
Mail Code: NVS-111
400 Seventh Street, SW, Room No. 5313
Washington, DC 20590

This Final Test Report was prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, under Contract No. DTNH22-01-D-32005. This document is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The United States Government assumes no liability for its contents or use thereof.

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16. Abstract This CRS test was performed in conjunction with a New Car Assessment Program (NCAP) load cell barrier test. An Evenflo Vanguard 5 forward facing convertible was secured in Position 3 (P3) with the LATCH system and top tether. An Evenflo Vanguard Titan Overhead Shield forward facing convertible was secured in Position 4 (P4) with the LATCH system and top tether. This test was conducted at the General Dynamics Crash Test Facility in Buffalo, New York, on January 29, 2004.					
ATD Position		HIC 15		HIC 36	
P3 (Right Rear) (044)		778.2		1248.8	
P4 (Left Rear) (142)		525.5		946.0	
				Clip (3 ms)	
				51.5	
				48.4	
17. Key Words New Car Assessment Program (NCAP)				18. Distribution Statement	
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SECTION 1

PURPOSE AND SUMMARY OF TEST M40103

The purpose of this test was to obtain CRS performance data in a frontal impact NCAP condition. The 56.97 kph NCAP frontal impact test was conducted in accordance with the Office of Crashworthiness Standards (OCS) NCAP Laboratory Test Procedure.

SUMMARY

A forward facing convertible 5-point belt CRS and a 3 year old child dummy (serial no. 044) was secured in the right rear occupant position (Position 3 or P3). A forward facing convertible overhead shield CRS and a 3 year old child dummy (serial no. 142) was secured in the left rear occupant position (Position 4 or P4). Both 3 Year Old Hybrid III (P572 P) child dummies were instrumented with head, chest, and pelvic triaxial accelerometers, a head rear Z accelerometer, a chest displacement sensor, and upper and lower six axial neck load cells. The dummies were calibrated previous to this test and the certification information is found in section 5.

The right rear child dummy's HIC (15 ms) was 778.2, the HIC over 36 ms was 1248.8 and the maximum chest deceleration over 3 ms was 51.5 g's. The left rear child dummy's HIC (15 ms) was 525.5, the HIC over 36 ms was 946.0 and the maximum chest deceleration over 3 ms was 48.4 g's.

SECTION 2
DATA SHEET NO. 1
CRASH TEST SUMMARY

TEST DUMMY INFORMATION:

DESCRIPTION	Position #3 CRS	Position #4 CRS
ATD Type/Serial No.	Hybrid III 3C/044	Hybrid III 3C /142
Restraint System:	Evenflo Vanguard 5 with LATCH and Top Tether	EvenFlo Vanguard Titan Overhead Shield with LATCH and Top Tether

Number of Data Channels 54
Number of Cameras: 1 Real Time
2 High Speed

POST TEST DOOR OPENING

DESCRIPTION	FRONT	REAR
Left Side Doors	Closed, Latched and Operable without tools	Closed, Latched and Operable without tools
Right Side Doors	Closed, Latched and Operable without tools	Closed, Latched and Operable without tools
Hatch/Other Door	N/A	N/A

POST TEST SEAT DATA

LOCATION	SEAT MOVEMENT (mm)	SEAT BACK FAILURE
P1 (Left Front)	0	None
P2 (Right Front)	0	None
P3 (Right Rear)	0	None
P4 (Left Rear)	0	None

VISIBLE DUMMY CONTACT POINTS

	Position #3 CRS	Position #4 CRS
Head Contact:	The face and chin to the chest and the back of the head to the child restraint	The chin to the chest, the face to the overhead shield and the back of the head to the child restraint
Upper Torso Contact:	None	None
Lower Torso Contact:	None	None
Left Knee Contact:	None	None
Right Knee Contact:	None	None

DATA SHEET NO. 2

CRS PARAMETER DATA

CRS: EvenFlo Vanguard 5 with LATCH and Top Tether and Evenflo Vanguard Titan Overhead Shield with Latch and Top Tether

NHTSA No. M40103

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Delivered Weight of Vehicle with Maximum Fluids = 1825.0 kg (A)

AS TESTED WEIGHT OF VEHICLE

(2 P572E + 2 P572P w/ CRS +CARGO + EQUIPMENT & INSTRUMENTATION):

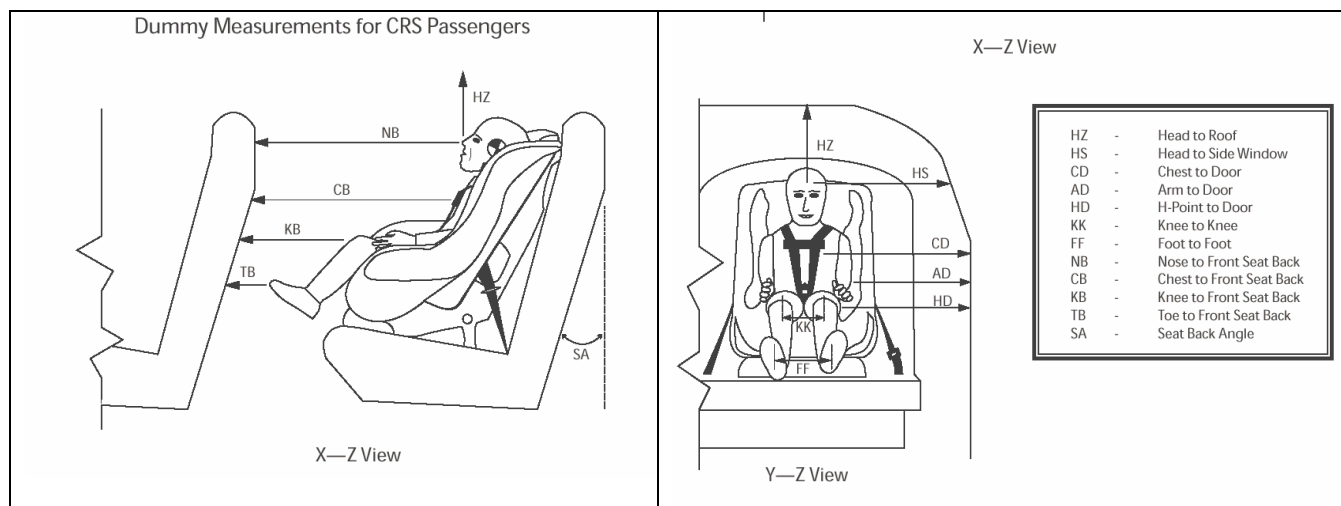
Left Front	=	<u>575.0</u>	kg	Left Rear	=	<u>504.0</u>	kg
Right Front	=	<u>521.5</u>	kg	Right Rear	=	<u>504.0</u>	kg
TOTAL FRONT	=	<u>1096.5</u>	kg	TOTAL REAR	=	<u>1008.0</u>	kg
TOTAL TEST WEIGHT =		<u>2104.5</u>	kg				

DATA SHEET NO. 3

CHILD DUMMY POSITIONING IN VEHICLE

CRS: EvenFlo Vanguard 5 with LATCH and Top Tether and Evenflo Vanguard Titan Overhead Shield with Latch and Top Tether

NHTSA No. M40103



Measurement	P3 CRS (044)	P4 CRS (142)
SA	15	15
HS	354	348
CD	377	384
AD	228	235
HD	295	330
HZ	332	342
NB	521	527
CB	528	560
KK	148	150
FF	160	160
KB – LEFT	330	323
KB – RIGHT	325	327
TB – LEFT	40	35
TB – RIGHT	40	25

All dimensions in mm (unless noted)

P3 – Right Rear Passenger (CRS #1)

P4 – Left Rear Passenger (CRS #2)

DATA SHEET 4

CHILD DUMMY INJURY CRITERIA VALUES

CRS: EvenFlo Vanguard 5 with LATCH and Top Tether and Evenflo Vanguard Titan
Overhead Shield with Latch and Top Tether

NHTSA No. M40103

		MAXIMUM VALUE							
		Position #3				Position #4			
DESCRIPTION	Unit	Pos	msec	Neg	msec	Pos	msec	Neg	msec
Head X	g	12.8	236.9	-40.7	97.6	65.3	178.9	-48.1	102.2
Head Y	g	4.9	237.9	-7.0	95.9	8.8	291.8	-5.4	88.7
Head Z	g	78.1	82.1	-7.3	132.6	65.0	74.7	-4.5	279.7
Head Resultant	g	82.6	83.7	0.0	-15.2	71.3	178.8	0.1	-23.6
Head Rear Z	g	85.0	92.1	-26.1	207.1	73.5	78.4	-19.4	44.0
Upper Neck Fx	N	89.1	185.0	-1184.7	101.6	59.3	253.0	-824.7	100.4
Upper Neck Fy	N	213.1	101.3	-128.8	82.4	84.2	118.3	-112.0	88.7
Upper Neck Fz	N	1863.7	82.2	-105.1	237.0	1730.3	74.5	-124.2	44.5
Upper Neck F Resultant	N	1980.2	83.7	0.8	-15.2	1785.5	85.8	1.0	7.7
Upper Neck Mx	N-m	4.7	141.4	-12.5	88.7	4.2	201.3	-6.7	225.8
Upper Neck My	N-m	7.5	178.2	-21.6	103.5	9.1	163.6	-15.5	194.3
Upper Neck Mz	N-m	4.4	249.8	-3.0	207.1	2.5	96.9	-6.1	208.6
Upper Neck M Resultant	N-m	23.2	103.2	0.2	-11.0	16.5	194.8	0.1	-24.3
Lower Neck Fx	N	68.4	267.1	-1222.7	78.6	104.2	252.3	-1412.6	75.1
Lower Neck Fy	N	131.4	100.0	-101.0	152.8	84.5	136.5	-260.2	87.9
Lower Neck Fz	N	1700.8	82.2	-423.0	130.8	1487.2	85.4	-346.2	129.0
Lower Neck F Resultant	N	1989.7	79.2	0.7	-14.9	2037.6	74.7	1.9	5.1
Lower Neck Mx	N-m	5.9	102.7	-24.4	86.3	8.4	162.9	-23.7	94.5
Lower Neck My	N-m	129.9	100.7	-6.3	193.8	110.1	99.3	-3.7	252.4
Lower Neck Mz	N-m	4.8	248.7	-8.5	84.4	3.9	155.3	-6.1	89.9
Lower Neck M Resultant	N-m	130.0	100.7	0.1	-8.0	111.8	99.2	0.1	-38.9
Chest X	g	10.9	156.8	-46.9	65.5	7.7	160.6	-41.4	65.7
Chest Y	g	26.4	127.9	-9.8	67.7	4.7	293.3	-4.7	92.5
Chest Z	g	25.5	95.6	-32.0	120.5	15.5	88.5	-34.5	55.4
Chest Resultant	g	53.2	65.3	0.1	14.6	49.1	58.8	0.1	-22.2
Chest Displacement	g	0.1	21.1	-22.5	103.9	0.1	19.3	-22.7	70.8

DATA SHEET 4

CHILD DUMMY INJURY CRITERIA VALUES (CONTINUED)

CRS: EvenFlo Vanguard 5 with LATCH and Top Tether and Evenflo Vanguard Titan
Overhead Shield with Latch and Top Tether

NHTSA No. M40103

		MAXIMUM VALUE							
		Position #3				Position #4			
DESCRIPTION	Unit	Pos	msec	Neg	msec	Pos	msec	Neg	msec
Pelvic X	g	38.5	118.0	-64.5	59.6	32.4	115.1	-71.3	57.3
Pelvic Y	g	9.3	139.1	-10.7	60.1	4.1	110.5	-8.2	74.0
Pelvic Z	g	20.3	94.1	-29.3	57.3	13.0	194.7	-28.4	56.6
Pelvic Resultant	g	71.2	59.0	0.2	10.5	76.9	56.9	0.1	-24.7
Tether Belt Load	N	1623.1	71.3	-23.8	17.4	1427.5	73.5	-29.7	214.1

DATA SHEET 4

CHILD DUMMY INJURY CRITERIA VALUES (CONTINUED)

CRS: EvenFlo Vanguard 5 with LATCH and Top Tether and Evenflo Vanguard Titan
Overhead Shield with Latch and Top Tether

NHTSA No. M40103

HEAD INJURY CRITERIA (HIC)								
HIC15					HIC36			
	t ₁ (msec)	t ₂ (msec)	Average Acceleration t ₁ to t ₂		t ₁ (msec)	t ₂ (msec)	Average Acceleration t ₁ to t ₂	
HIC				HIC				
Position #3 - Right	778.2	76.3	91.3	76.9 g	1248.8	66.1	102.1	65.5 g
Position #4 - Left	525.5	72.4	87.4	65.7 g	946.0	66.2	102.2	58.6 g

CLIP SUMMARY*				
	CLIP (g's)	t ₁ (msec)	t ₂ (msec)	CSI
Position #3 - Right	51.5	63.9	66.9	699.2
Position #4 - Left	48.4	55.9	59.8	578.6

* The maximum chest resultant acceleration is defined as the maximum acceleration which exceeds 0.003 seconds in duration.

**Chest X Sensor Damaged – Data is Not Accurate

DATA SHEET NO. 5

CRS PERFORMANCE DATA

CRS: EvenFlo Vanguard 5 with LATCH and Top Tether and Evenflo Vanguard Titan
Overhead Shield with Latch and Top Tether

NHTSA No. M40103

		MAXIMUM VALUE			
DESCRIPTION	Unit	Positive	Time (ms)	Negative	Time (ms)
P3 CRS X	g	§	§	§	§
P3 CRS Y	g	§	§	§	§
P3 CRS Z	g	§	§	§	§
P3 CRS Resultant	g	§	§	§	§
P4 CRS X	g	§	§	§	§
P4 CRS Y	g	§	§	§	§
P4 CRS Z	g	§	§	§	§
P4 CRS Resultant	g	§	§	§	§

§ - Questionable data – Sensor became dislodged during the event.

DATA SHEET NO. 5**CRS PERFORMANCE DATA (CONTINUED)**

CRS: EvenFlo Vanguard 5 with LATCH and Top Tether and Evenflo Vanguard Titan
Overhead Shield with Latch and Top Tether

NHTSA No. M40103

POSITION #3 CRS POST-TEST INSPECTION (Serial No. 3691331 P1 23Oct03)

LOCATION	DAMAGE	REMARKS
Upper Tether Strap	No	None
Upper Tether Buckle	No	None
Upper Tether Hook	No	None
Vehicle Upper Tether Anchor	No	None
Lower Anchor Strap	No	None
Lower Anchor Buckle	No	None
Lower Anchor Hooks	No	None
Vehicle Lower CRS Anchors	No	None
Five Point Harness Connections	No	None
Cracks on CRS	No	None
Fabric Tears on CRS	No	None
Vehicle Seat Structure	No	None
Vehicle Seat Fabric Tears	No	None
Child Dummy	No	None

POSITION #4 CRS POST-TEST INSPECTION (Serial No. 368126 1P1 19Nov03)

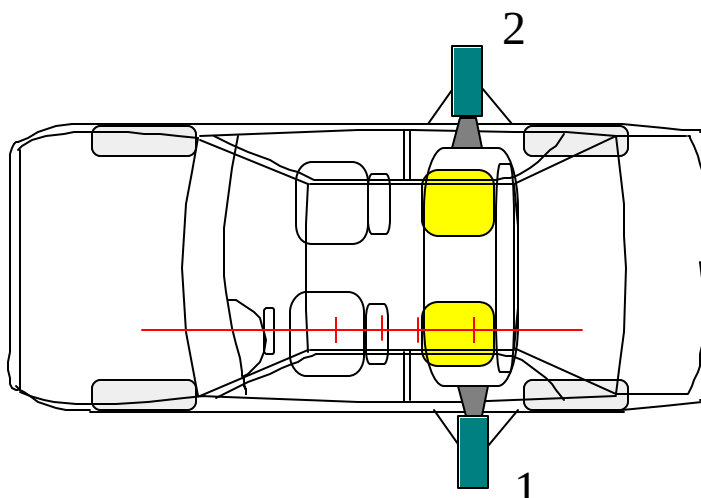
LOCATION	DAMAGE	REMARKS
Upper Tether Strap	No	None
Upper Tether Buckle	No	None
Upper Tether Hook	No	None
Vehicle Upper Tether Anchor	No	None
Lower Anchor Strap	No	None
Lower Anchor Buckle	No	None
Lower Anchor Hooks	No	None
Vehicle Lower CRS Anchors	No	None
Five Point Harness Connections	No	None
Cracks on CRS	No	None
Fabric Tears on CRS	Yes	Overhead shield cover was torn by chest belt clip during the event.
Vehicle Seat Structure	No	None
Vehicle Seat Fabric Tears	No	None
Child Dummy	No	None

DATA SHEET NO. 6

CRS CAMERA DATA

CRS: EvenFlo Vanguard 5 with LATCH and Top Tether and Evenflo Vanguard Titan Overhead Shield with Latch and Top Tether

NHTSA No. M40103



Camera No.	View	Coordinates (millimeters)			Angle** (deg.)	Lens (mm)	Film Speed (fps)
		X*	Y*	Z*			
1	Left side CRS lateral view	3658	2833	2572	-17	24-70	1000
2	Right side CRS lateral view	3665	2843	2613	-16	24-70	1000

* Reference (from point of impact); all measurements accurate to within ± 6 mm

** = referenced to horizontal plane

X = film plane to monorail centerline

Y = film plane to impact location

Z = film plane to ground

SECTION 3

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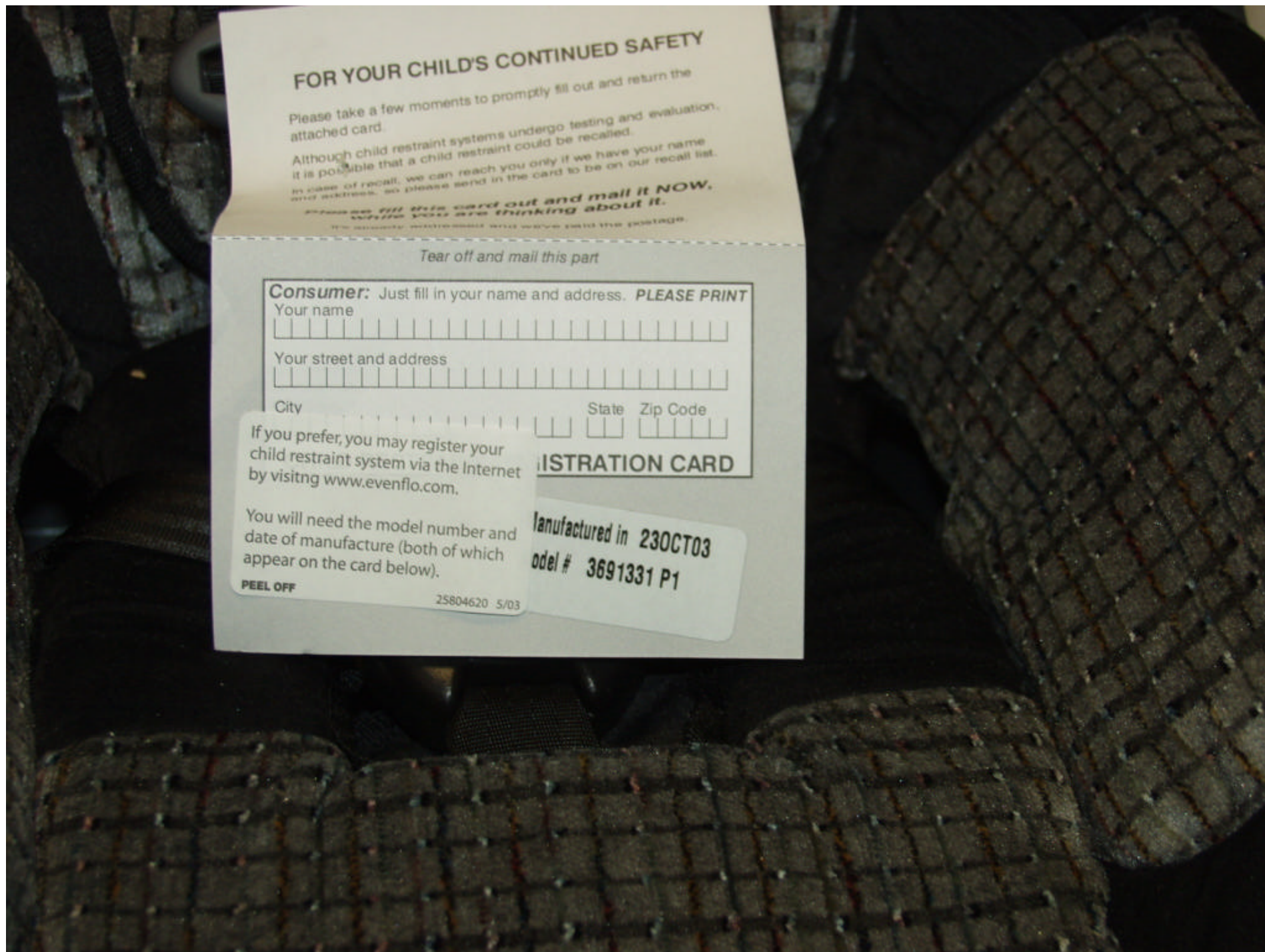


Figure 3-1 CLOSE-UP VIEW OF POSITION 3 CRS LABEL



Figure 3-2 PRE-TEST FRONTAL VIEW OF POSITION 3 CRS



Figure 3-3 POST-TEST FRONTAL VIEW OF POSITION 3 CRS



Figure 3-4 PRE-TEST REAR VIEW OF POSITION 3 CRS



Figure 3-5 POST-TEST REAR VIEW OF POSITION 3 CRS



Figure 3-6 PRE-TEST LEFT SIDE VIEW OF POSITION 3 CRS



Figure 3-7 POST-TEST LEFT SIDE VIEW OF POSITION 3 CRS



Figure 3-8 PRE-TEST RIGHT SIDE VIEW OF POSITION 3 CRS



Figure 3-9 POST-TEST RIGHT SIDE VIEW OF POSITION 3 CRS

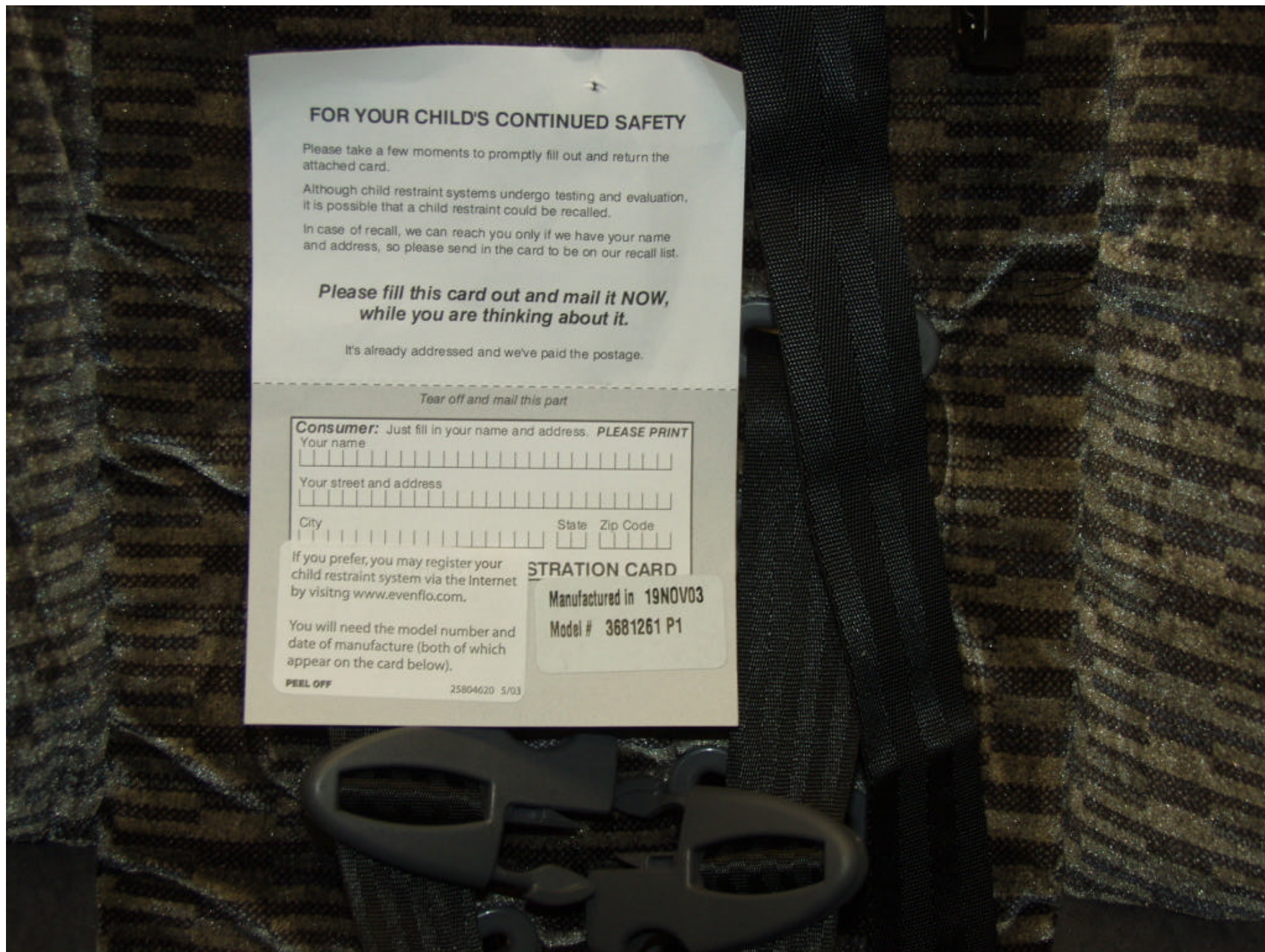


Figure 3-10 CLOSE-UP VIEW OF POSITION 4 CRS LABEL



Figure 3-11 PRE-TEST FRONTAL VIEW OF POSITION 4 CRS



Figure 3-12 POST-TEST FRONTAL VIEW OF POSITION 4 CRS



Figure 3-13 PRE-TEST REAR VIEW OF POSITION 4 CRS

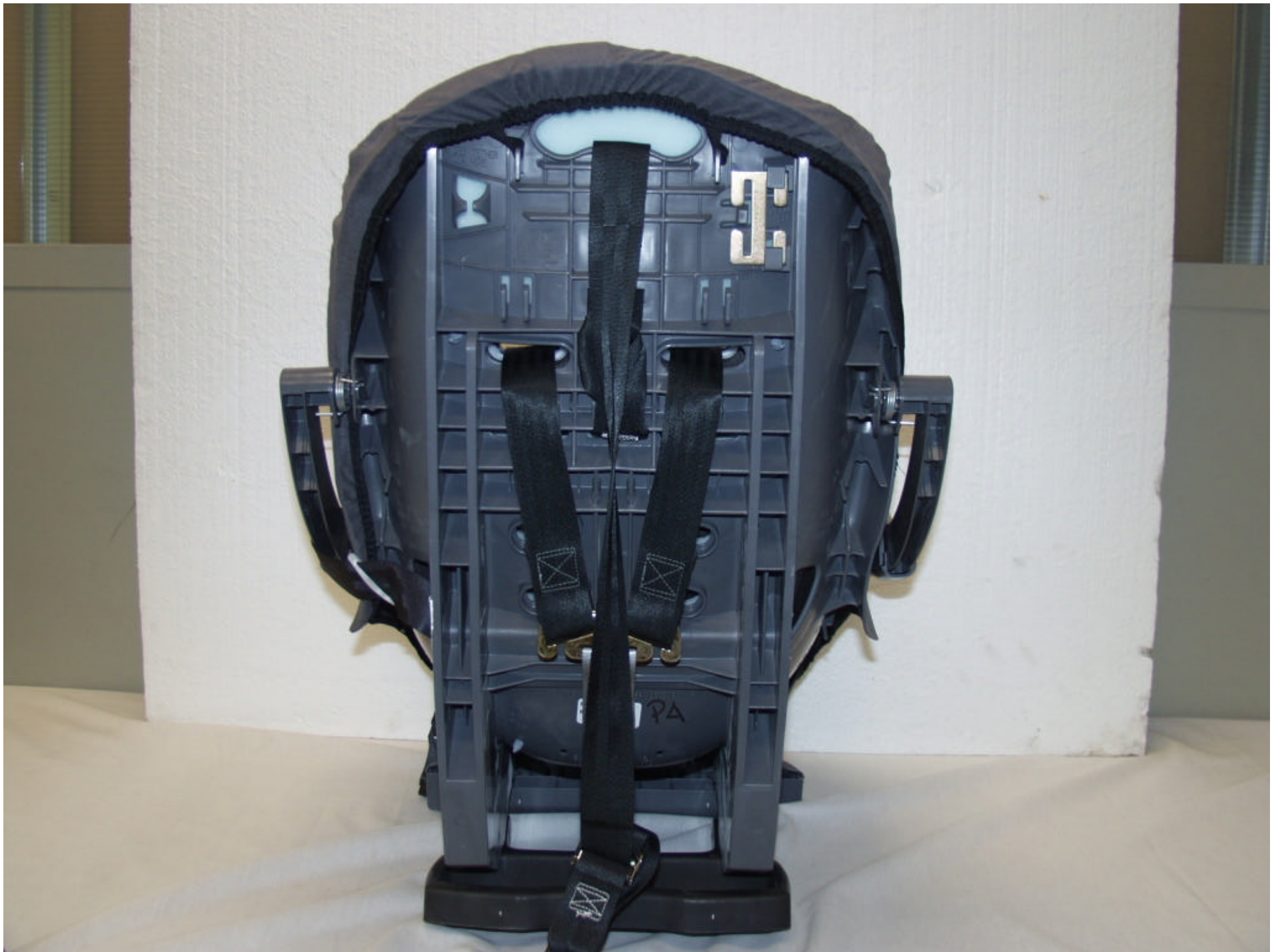


Figure 3-14 POST-TEST REAR VIEW OF POSITION 4 CRS



Figure 3-15 PRE-TEST LEFT SIDE VIEW OF POSITION 4 CRS



Figure 3-16 POST-TEST LEFT SIDE VIEW OF POSITION 4 CRS



Figure 3-17 PRE-TEST RIGHT SIDE VIEW OF POSITION 4 CRS



Figure 3-18 POST-TEST RIGHT SIDE VIEW OF POSITION 4 CRS



Figure 3-19 PRE-TEST POSITION 3 LEFT SIDE VIEW



Figure 3-20 POST-TEST POSITION 3 LEFT SIDE VIEW



Figure 3-21 PRE-TEST POSITION 4 LEFT SIDE VIEW



Figure 3-22 POST-TEST POSITION 4 LEFT SIDE VIEW



Figure 3-23 PRE-TEST POSITION 3 RIGHT SIDE VIEW



Figure 3-24 POST-TEST POSITION 3 RIGHT SIDE VIEW



Figure 3-25 PRE-TEST POSITION 4 RIGHT SIDE VIEW



Figure 3-26 POST-TEST POSITION 4 RIGHT SIDE VIEW



Figure 3-27 PRE-TEST POSITION 3 FRONT VIEW



Figure 3-28 POST-TEST POSITION 3 FRONT VIEW



Figure 3-29 PRE-TEST POSITION 4 FRONT VIEW



Figure 3-30 POST-TEST POSITION 4 FRONT VIEW

SECTION 4

CHILD DUMMY RESPONSE AND CRS DATA TRACES

TABLE OF DATA PLOTS

PLOT	PLOT NAME[UNITS, CHANNEL FILTER CLASS]	PAGE
1	V1P3 Head x [g, CFC_1000]	4-4
2	V1P3 Head y [g, CFC_1000]	4-5
3	V1P3 Head z [g, CFC_1000]	4-6
4	V1P3 Head Resultant [g, CFC_1000]	4-7
5	V1P3 Head Rear z [g, CFC_1000]	4-8
6	V1P3 Upper Neck Fx [N, CFC_1000]	4-9
7	V1P3 Upper Neck Fy [N, CFC_1000]	4-10
8	V1P3 Upper Neck Fz [N, CFC_1000]	4-11
9	V1P3 Upper Neck F Resultant [N, CFC_1000]	4-12
10	V1P3 Upper Neck Mx [N-m, CFC_600]	4-13
11	V1P3 Upper Neck My [N-m, CFC_600]	4-14
12	V1P3 Upper Neck Mz [N-m, CFC_600]	4-15
13	V1P3 Upper Neck M Resultant [N-m, CFC_600]	4-16
14	V1P3 Lower Neck Fx [N, CFC_1000]	4-17
15	V1P3 Lower Neck Fy [N, CFC_1000]	4-18
16	V1P3 Lower Neck Fz [N, CFC_1000]	4-19
17	V1P3 Lower Neck F Resultant [N, CFC_1000]	4-20
18	V1P3 Lower Neck Mx [N-m, CFC_600]	4-21
19	V1P3 Lower Neck My [N-m, CFC_600]	4-22
20	V1P3 Lower Neck Mz [N-m, CFC_600]	4-23
21	V1P3 Lower Neck M Resultant [N-m, CFC_600]	4-24
22	V1P3 Chest x [g, CFC_180]	4-25
23	V1P3 Chest y [g, CFC_180]	4-26
24	V1P3 Chest z [g, CFC_180]	4-27
25	V1P3 Chest Resultant [g, CFC_180]	4-28
26	V1P3 Chest Compression [mm, CFC_600]	4-29
27	V1P3 Pelvic x [g, CFC_1000]	4-30
28	V1P3 Pelvic y [g, CFC_1000]	4-31
29	V1P3 Pelvic z [g, CFC_1000]	4-32
30	V1P3 Pelvic Resultant [g, CFC_1000]	4-33
31	V1P3 Tether Belt [N, CFC_60]	4-34
32	V1P4 Head x [g, CFC_1000]	4-35
33	V1P4 Head y [g, CFC_1000]	4-36
34	V1P4 Head z [g, CFC_1000]	4-37
35	V1P4 Head Resultant [g, CFC_1000]	4-38
36	V1P4 Head Rear z [g, CFC_1000]	4-39
37	V1P4 Upper Neck Fx [N, CFC_1000]	4-40
38	V1P4 Upper Neck Fy [N, CFC_1000]	4-41
39	V1P4 Upper Neck Fz [N, CFC_1000]	4-42
40	V1P4 Upper Neck F Resultant [N, CFC_1000]	4-43
41	V1P4 Upper Neck Mx [N-m, CFC_600]	4-44
42	V1P4 Upper Neck My [N-m, CFC_600]	4-45
43	V1P4 Upper Neck Mz [N-m, CFC_600]	4-46
44	V1P4 Upper Neck M Resultant [N-m, CFC_600]	4-47
45	V1P4 Lower Neck Fx [N, CFC_1000]	4-48
46	V1P4 Lower Neck Fy [N, CFC_1000]	4-49
47	V1P4 Lower Neck Fz [N, CFC_1000]	4-50
48	V1P4 Lower Neck F Resultant [N, CFC_1000]	4-51
49	V1P4 Lower Neck Mx [N-m, CFC_600]	4-52

TABLE OF DATA PLOTS (Continued)

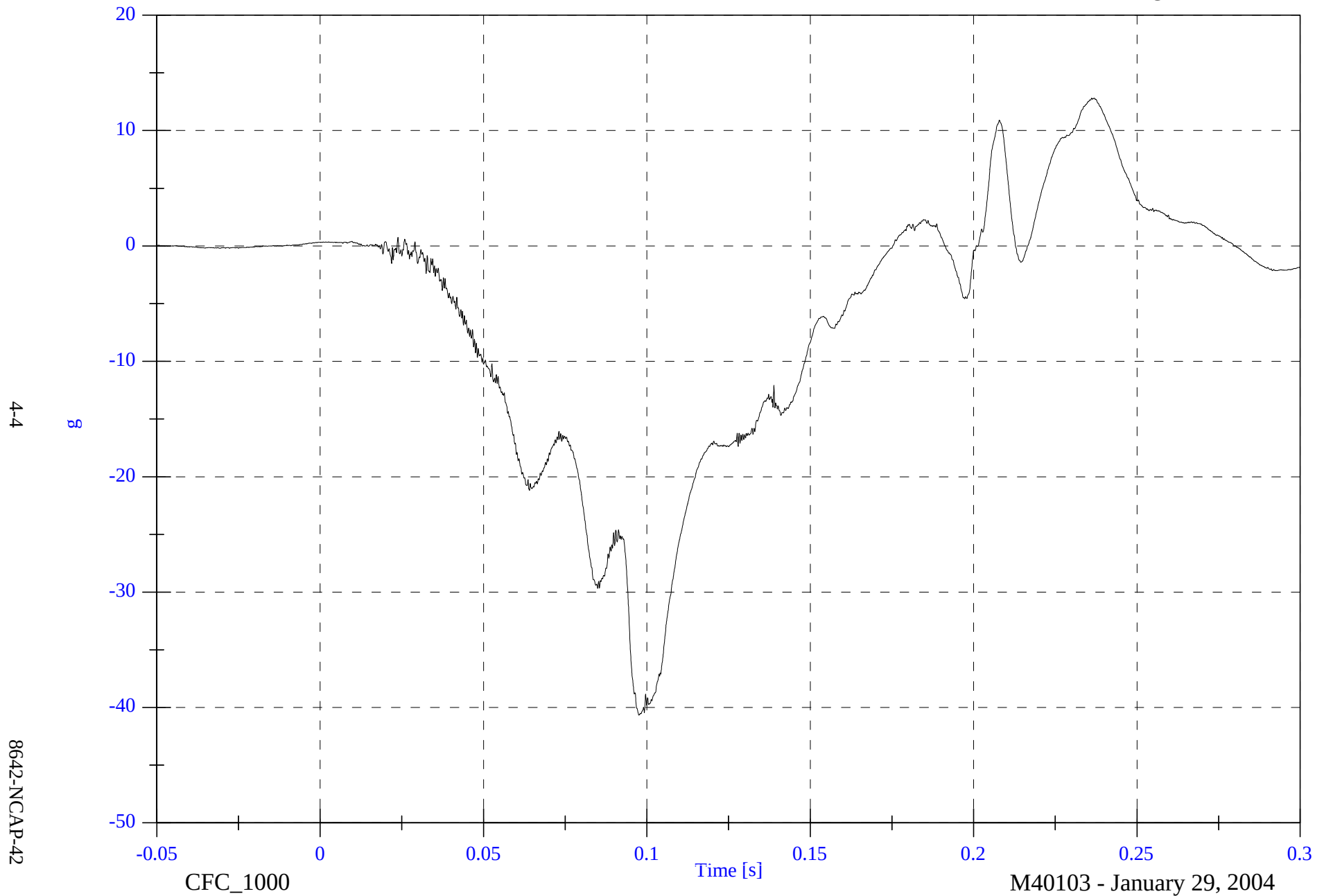
PLOT	PLOT NAME[UNITS, CHANNEL FILTER CLASS]	PAGE
50	V1P4 Lower Neck My [N-m, CFC_600]	4-53
51	V1P4 Lower Neck Mz [N-m, CFC_600]	4-54
52	V1P4 Lower Neck M Resultant [N-m, CFC_600]	4-55
53	V1P4 Chest x [g, CFC_180]	4-56
54	V1P4 Chest y [g, CFC_180]	4-57
55	V1P4 Chest z [g, CFC_180]	4-58
56	V1P4 Chest Resultant [g, CFC_180]	4-59
57	V1P4 Chest Compression [mm, CFC_600]	4-60
58	V1P4 Pelvic x [g, CFC_1000]	4-61
59	V1P4 Pelvic y [g, CFC_1000]	4-62
60	V1P4 Pelvic z [g, CFC_1000]	4-63
61	V1P4 Pelvic Resultant [g, CFC_1000]	4-64
62	V1P4 Tether Belt [N, CFC_60]	4-65
63	V1P3 Seat x [g, CFC_60]	4-66
64	V1P3 Seat y [g, CFC_60]	4-67
65	V1P3 Seat z [g, CFC_60]	4-68
66	V1P3 Seat Resultant [g, CFC_60]	4-69
67	V1P3 Seat x Velocity [kph, CFC_180]	4-70
68	V1P3 Seat y Velocity [kph, CFC_180]	4-71
69	V1P3 Seat z Velocity [kph, CFC_180]	4-72
70	V1P3 Seat x Displacement [mm, CFC_180]	4-73
71	V1P3 Seat y Displacement [mm, CFC_180]	4-74
72	V1P3 Seat z Displacement [mm, CFC_180]	4-75
73	V1P4 Seat x [g, CFC_60]	4-76
74	V1P4 Seat y [g, CFC_60]	4-77
75	V1P4 Seat z [g, CFC_60]	4-78
76	V1P4 Seat Resultant [g, CFC_60]	4-79
77	V1P4 Seat x Velocity [kph, CFC_180]	4-80
78	V1P4 Seat y Velocity [kph, CFC_180]	4-81
79	V1P4 Seat z Velocity [kph, CFC_180]	4-82
80	V1P4 Seat x Displacement [mm, CFC_180]	4-83
81	V1P4 Seat y Displacement [mm, CFC_180]	4-84
82	V1P4 Seat z Displacement [mm, CFC_180]	4-85

2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Head x

Max: 12.8 [g] at 0.237 [s]

Min: -40.7 [g] at 0.098 [s]

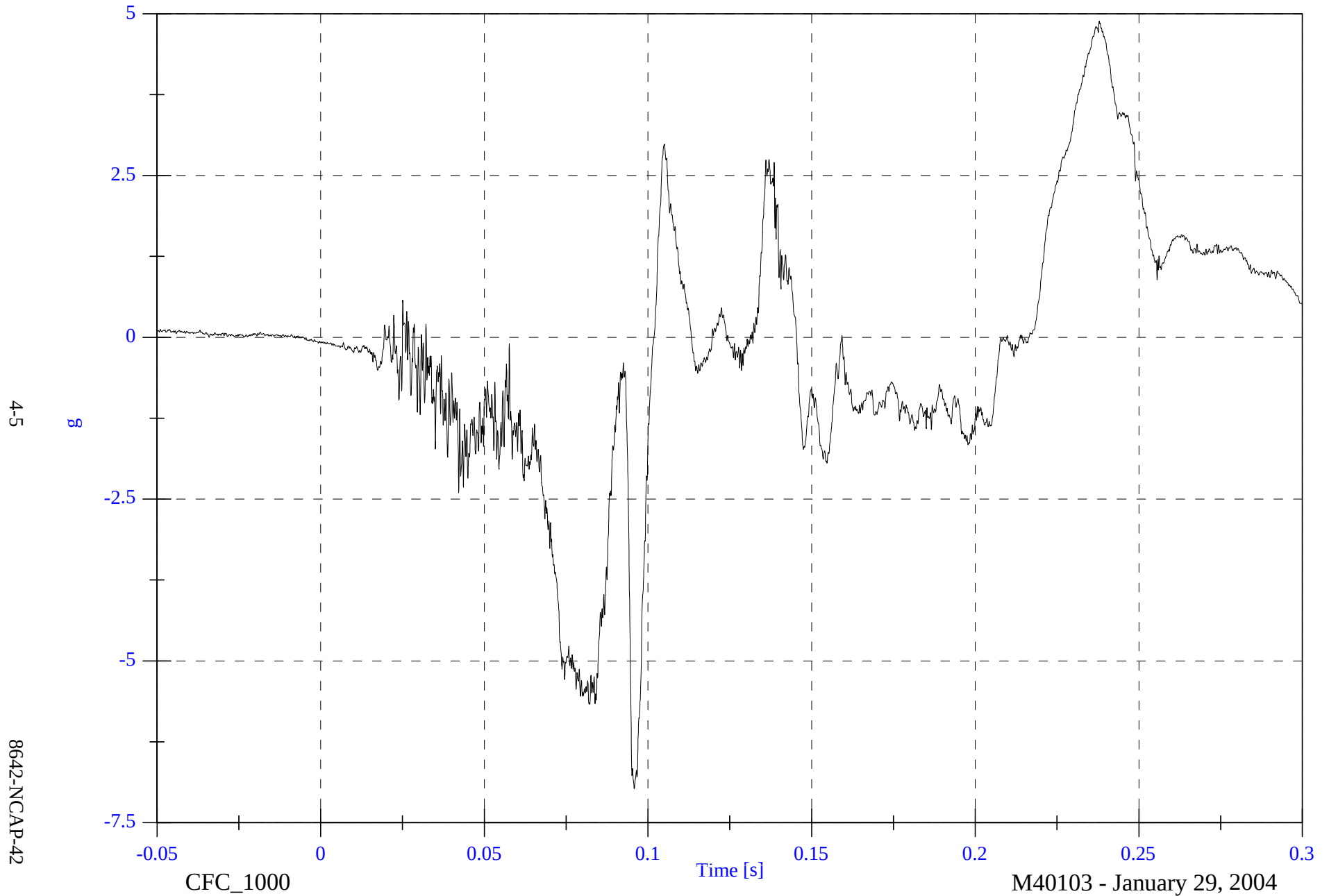


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Head y

Max: 4.9 [g] at 0.238 [s]

Min: -7.0 [g] at 0.096 [s]

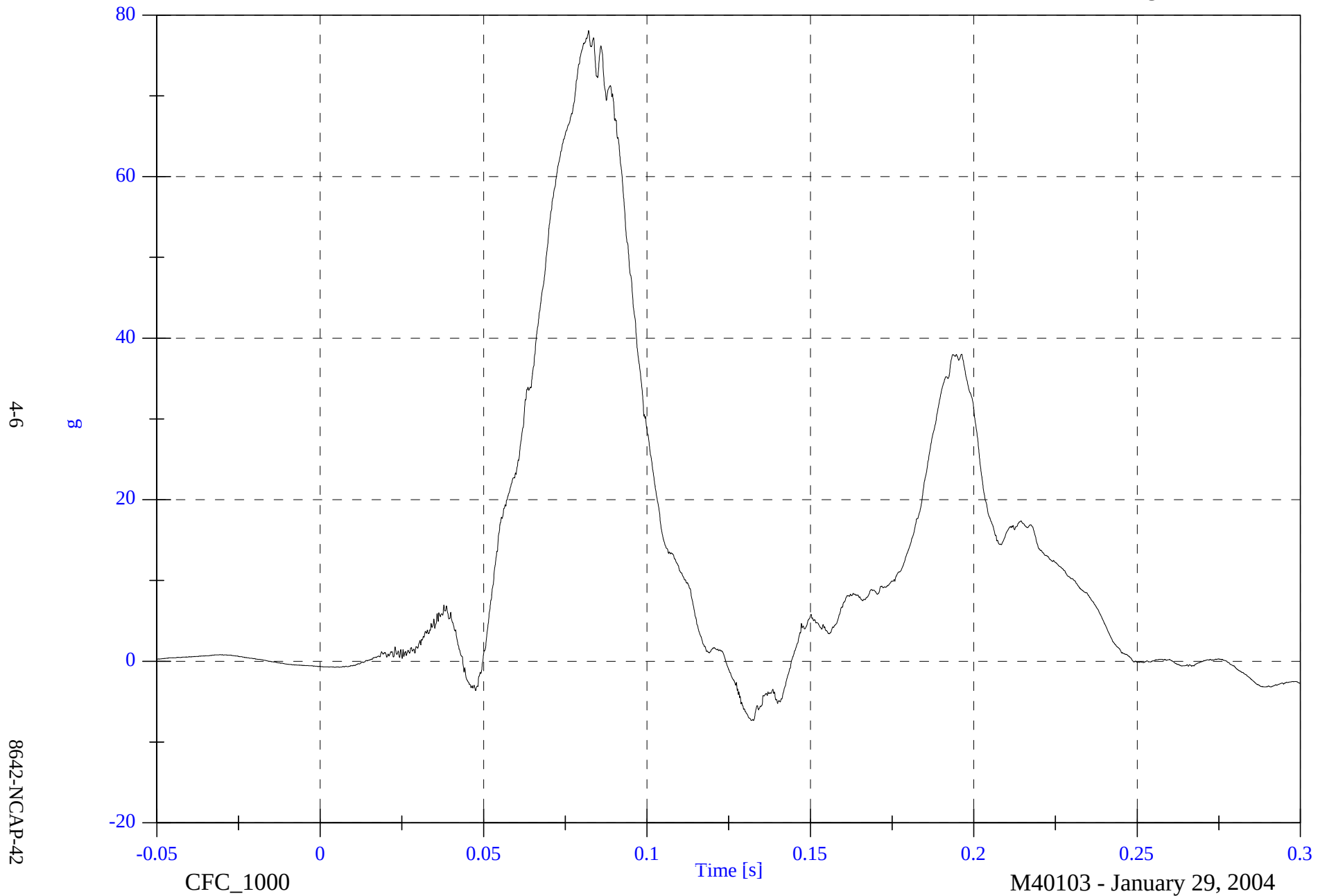


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Head z

Max: 78.1 [g] at 0.082 [s]

Min: -7.3 [g] at 0.133 [s]

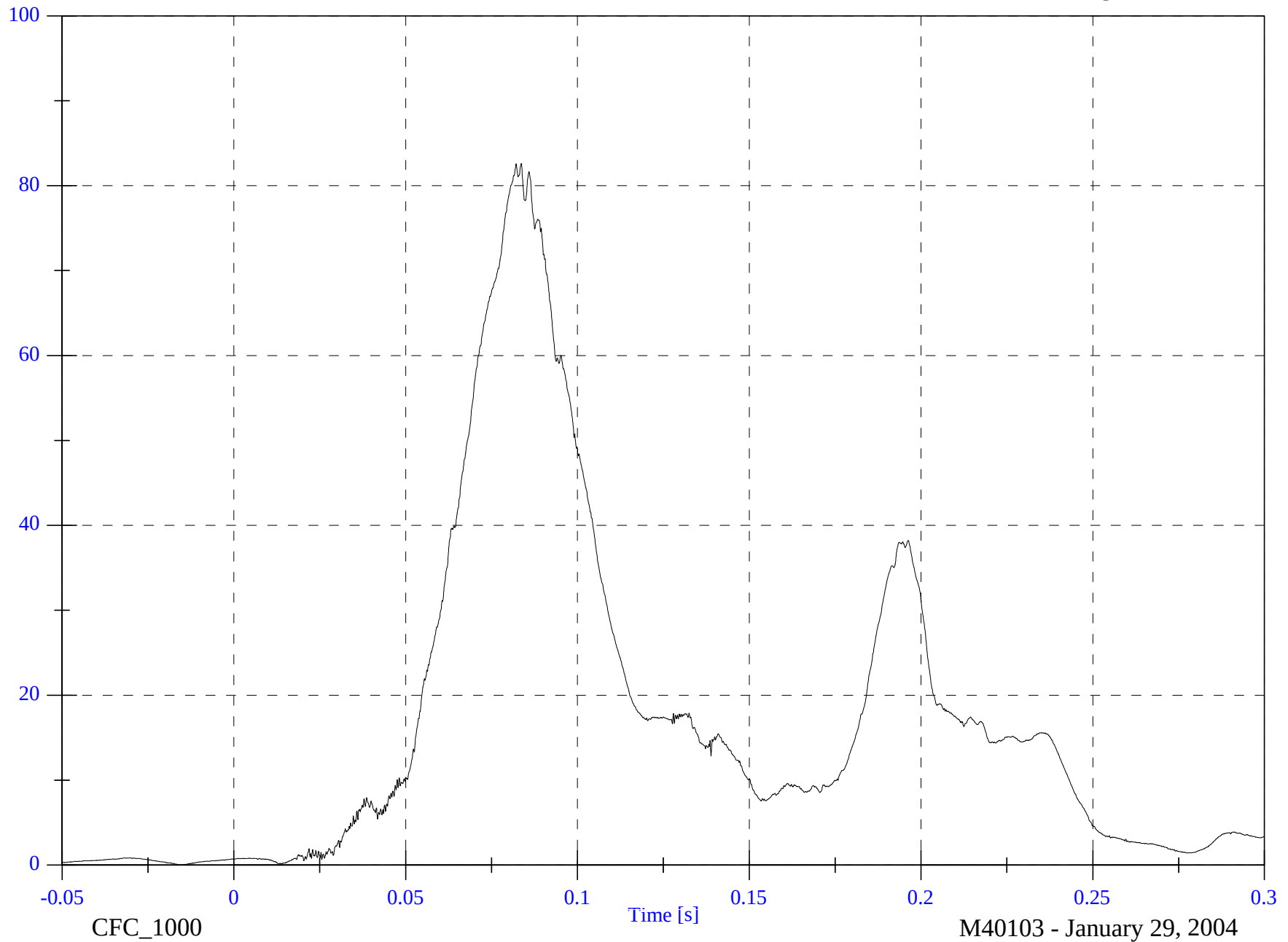


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Head Resultant

Max: 82.6 [g] at 0.084 [s]

Min: 0.0 [g] at -0.015 [s]

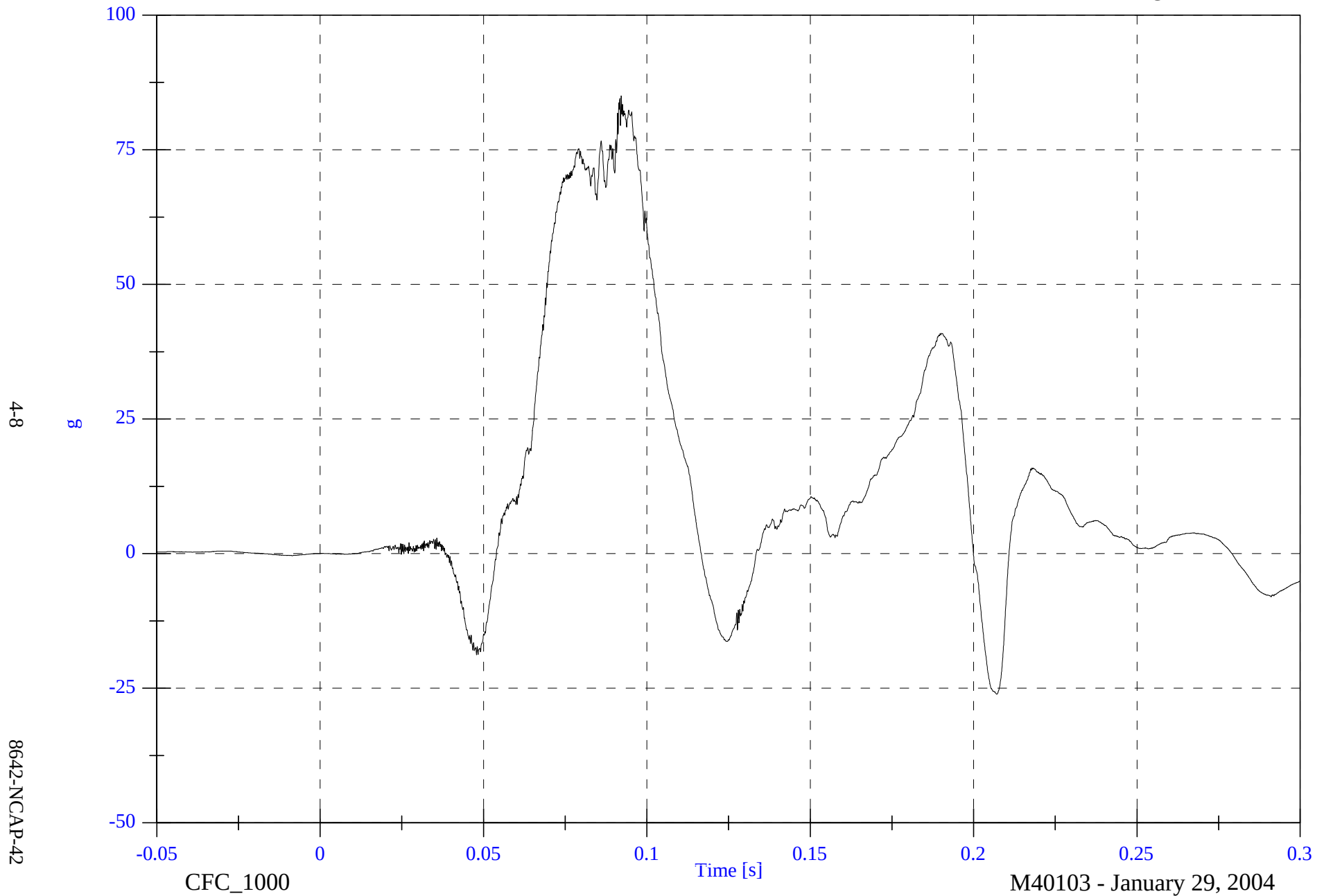


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Head Rear z

Max: 85.0 [g] at 0.092 [s]

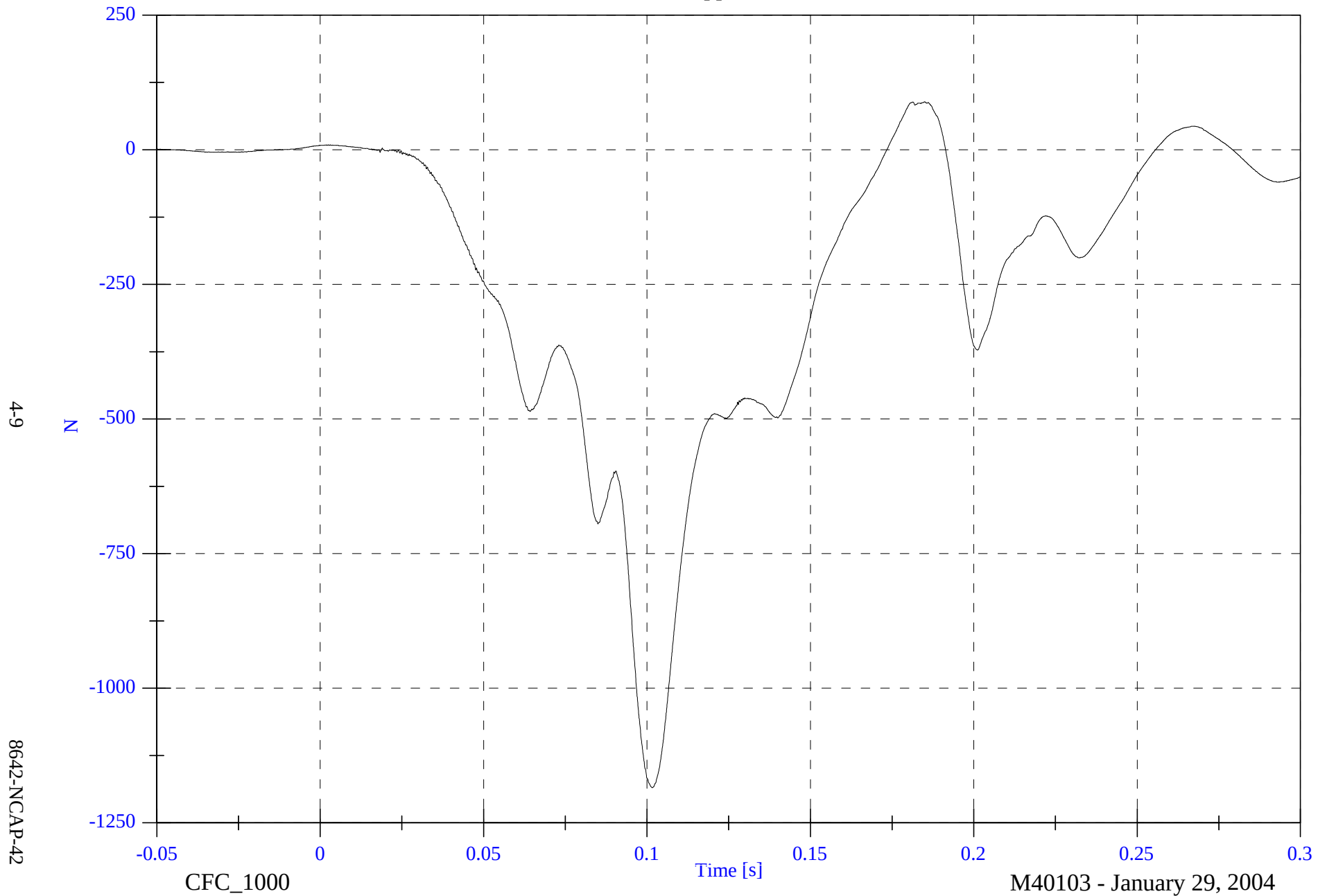
Min: -26.1 [g] at 0.207 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Upper Neck Fx

Max: 89.1 [N] at 0.185 [s]
Min: -1184.7 [N] at 0.102 [s]

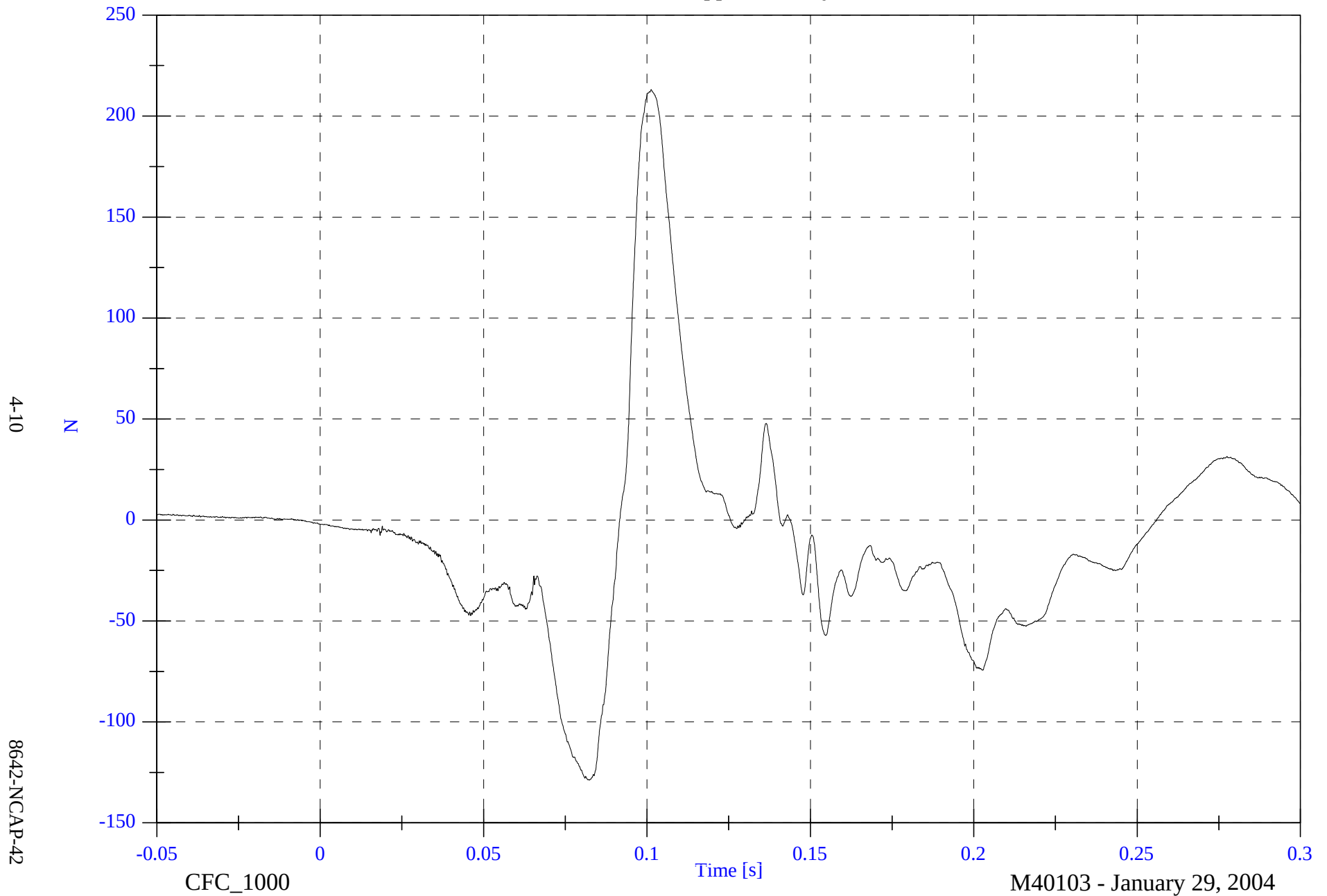


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Upper Neck Fy

Max: 213.1 [N] at 0.101 [s]

Min: -128.8 [N] at 0.082 [s]

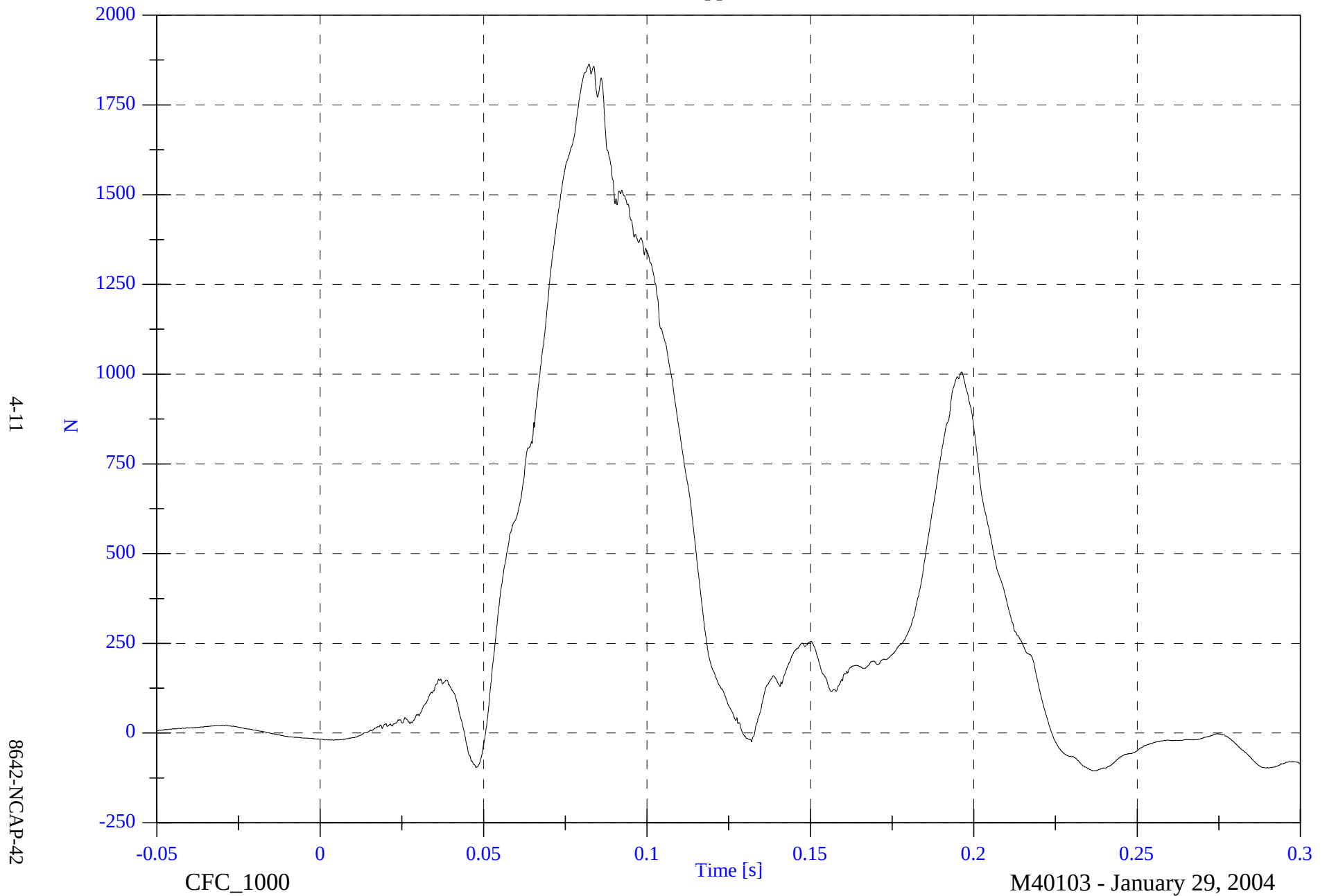


2004 NCAP Test 6 2004 Chevrolet Colorado

Max: 1863.7 [N] at 0.082 [s]

V1P3 Upper Neck Fz

Min: -105.1 [N] at 0.237 [s]

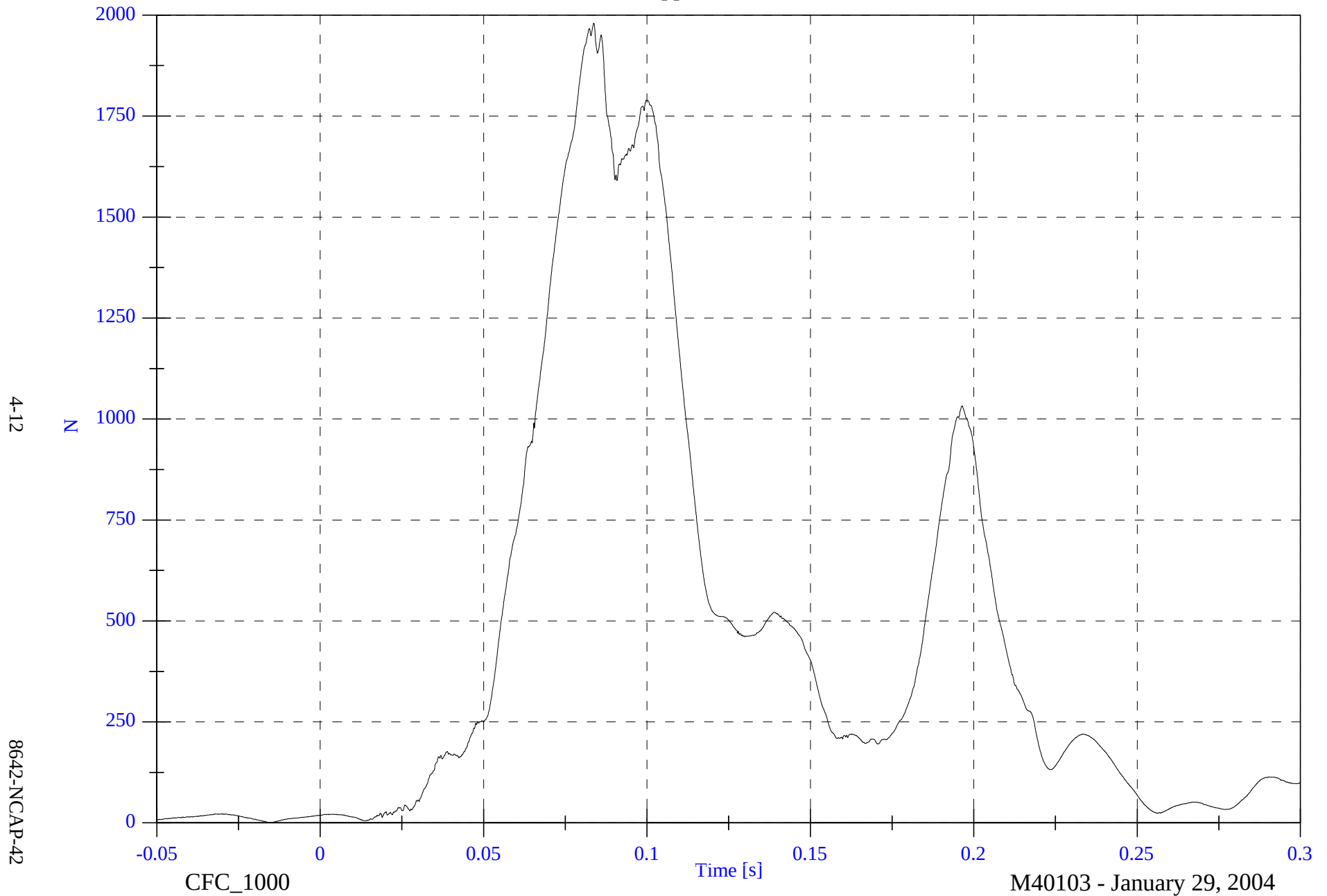


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Upper Neck F Resultant

Max: 1980.2 [N] at 0.084 [s]

Min: 0.8 [N] at -0.015 [s]

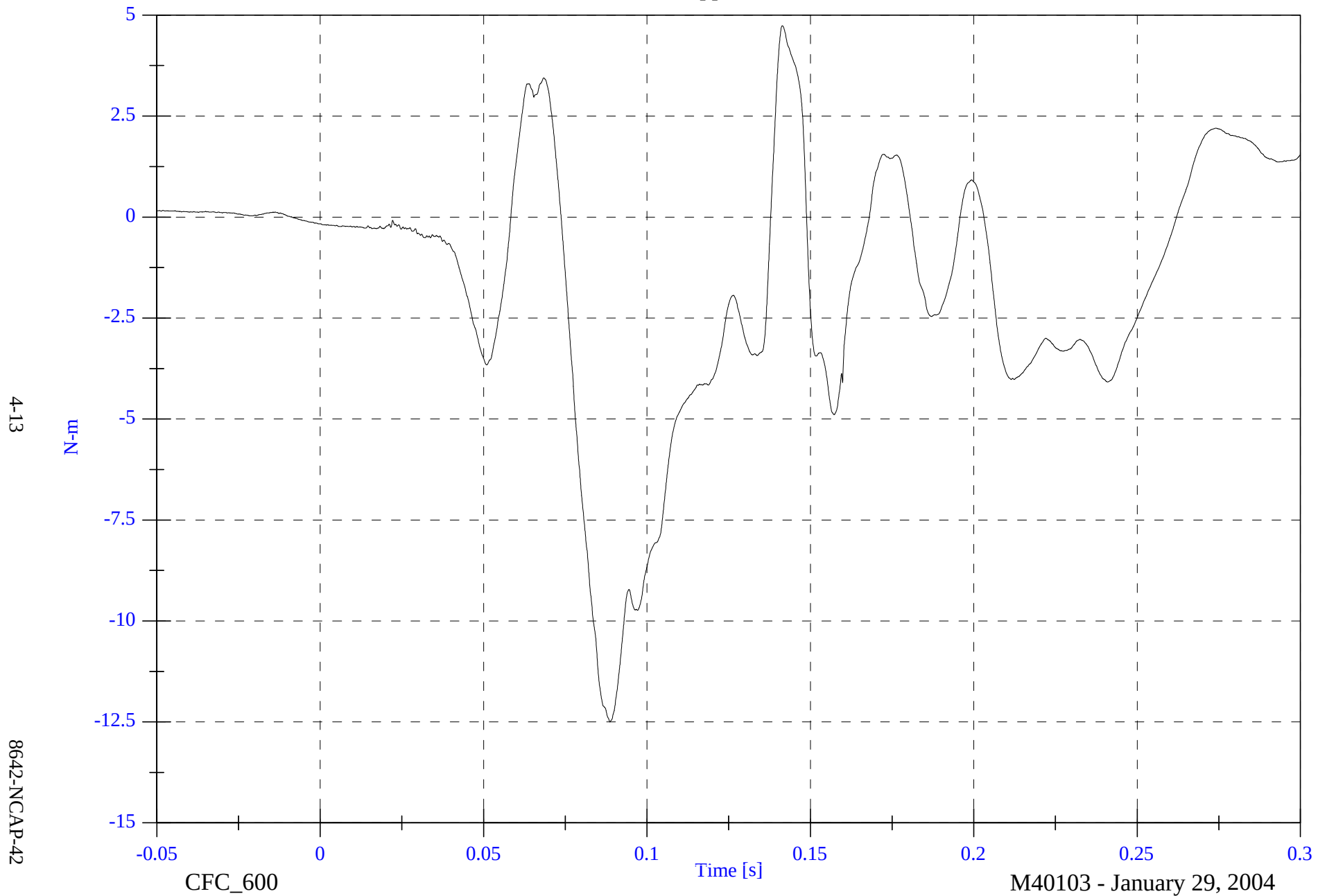


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Upper Neck Mx

Max: 4.7 [N-m] at 0.141 [s]

Min: -12.5 [N-m] at 0.089 [s]

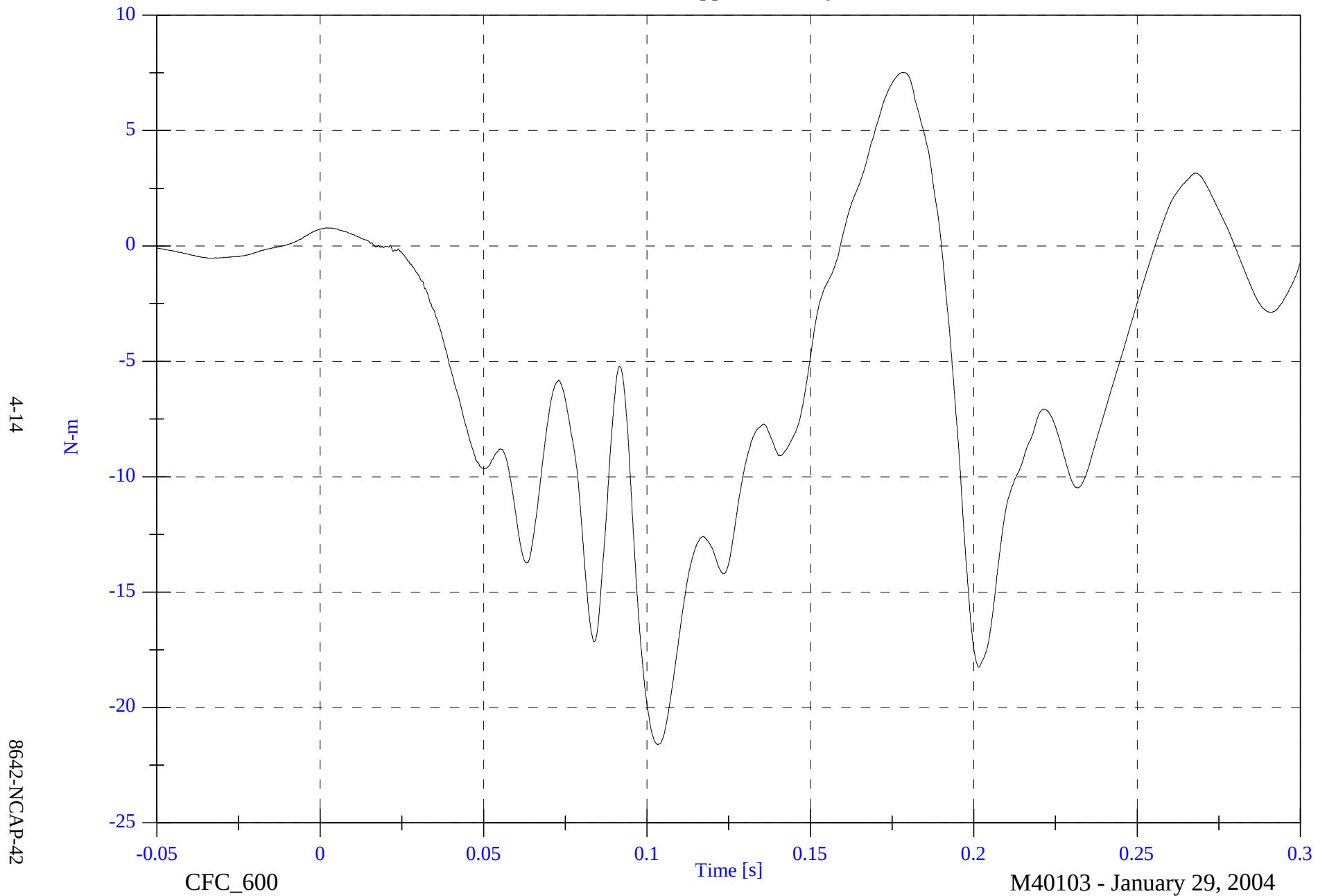


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Upper Neck My

Max: 7.5 [N-m] at 0.178 [s]

Min: -21.6 [N-m] at 0.103 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Upper Neck Mz

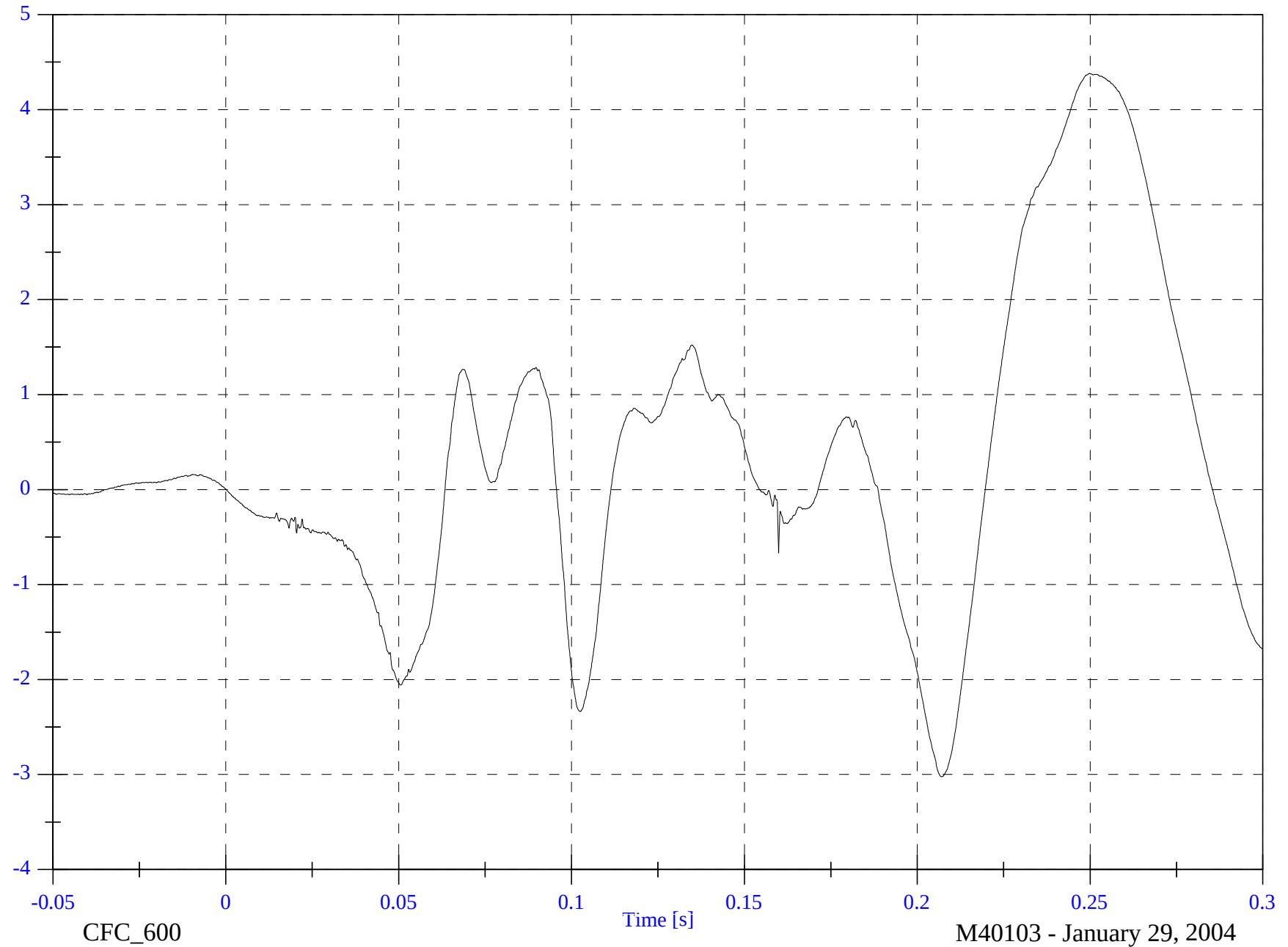
Max: 4.4 [N-m] at 0.250 [s]

Min: -3.0 [N-m] at 0.207 [s]

4-15

N-m

8642-NCAP-42



2004 NCAP Test 6 2004 Chevrolet Colorado

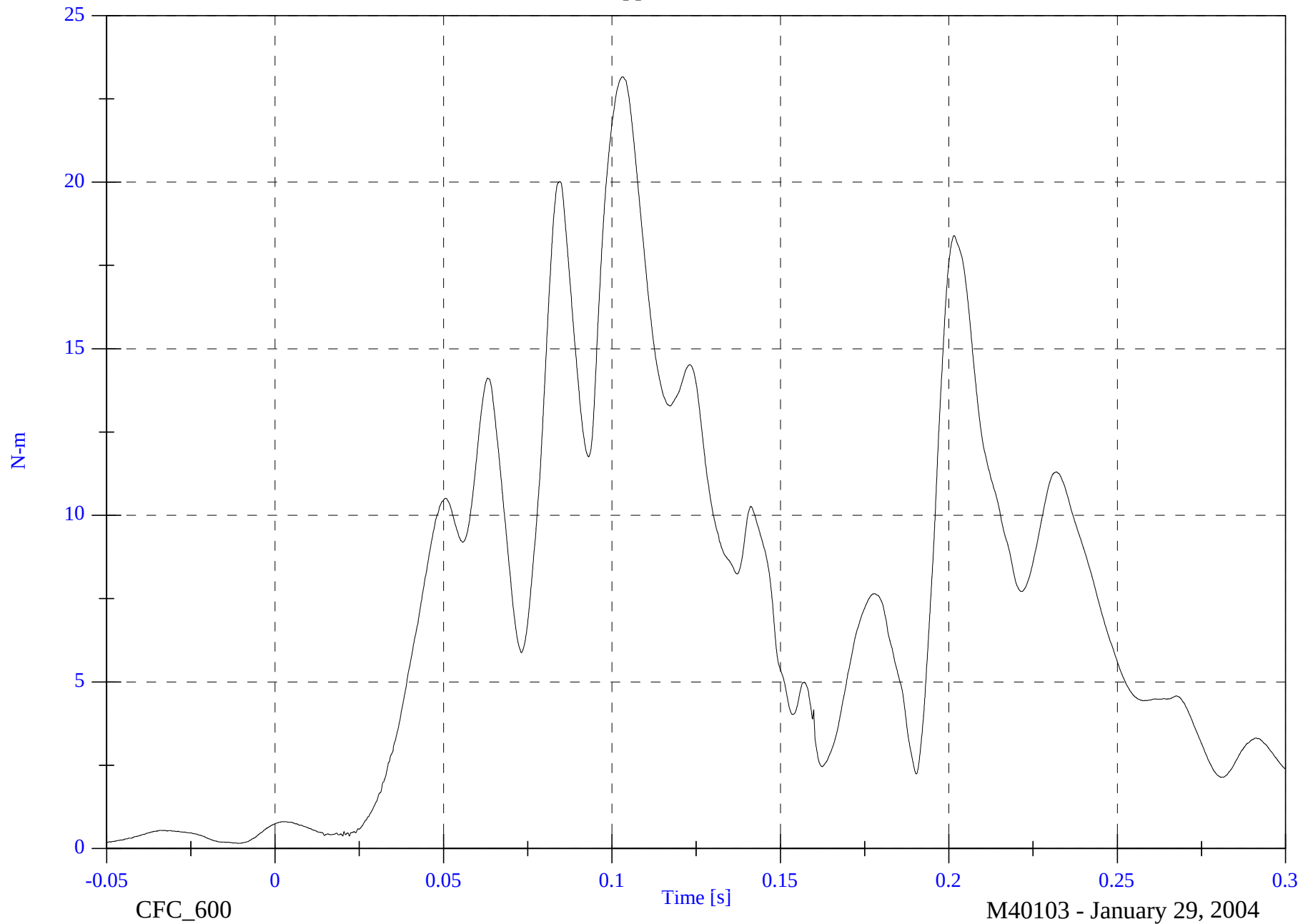
V1P3 Upper Neck M Resultant

Max: 23.2 [N-m] at 0.103 [s]

Min: 0.2 [N-m] at -0.011 [s]

4-16

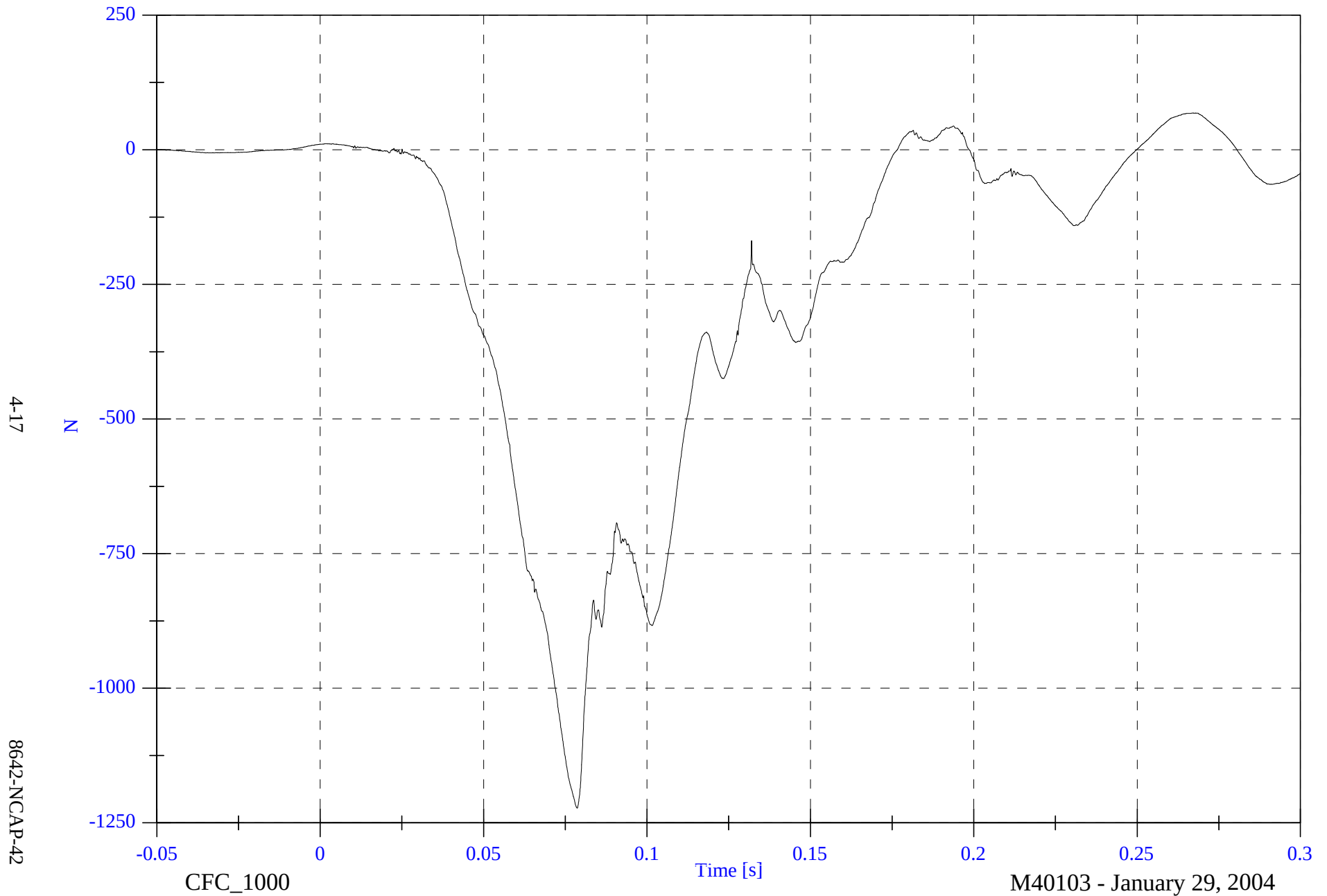
8642-NCAP-42



2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Lower Neck Fx

Max: 68.4 [N] at 0.267 [s]
Min: -1222.7 [N] at 0.079 [s]

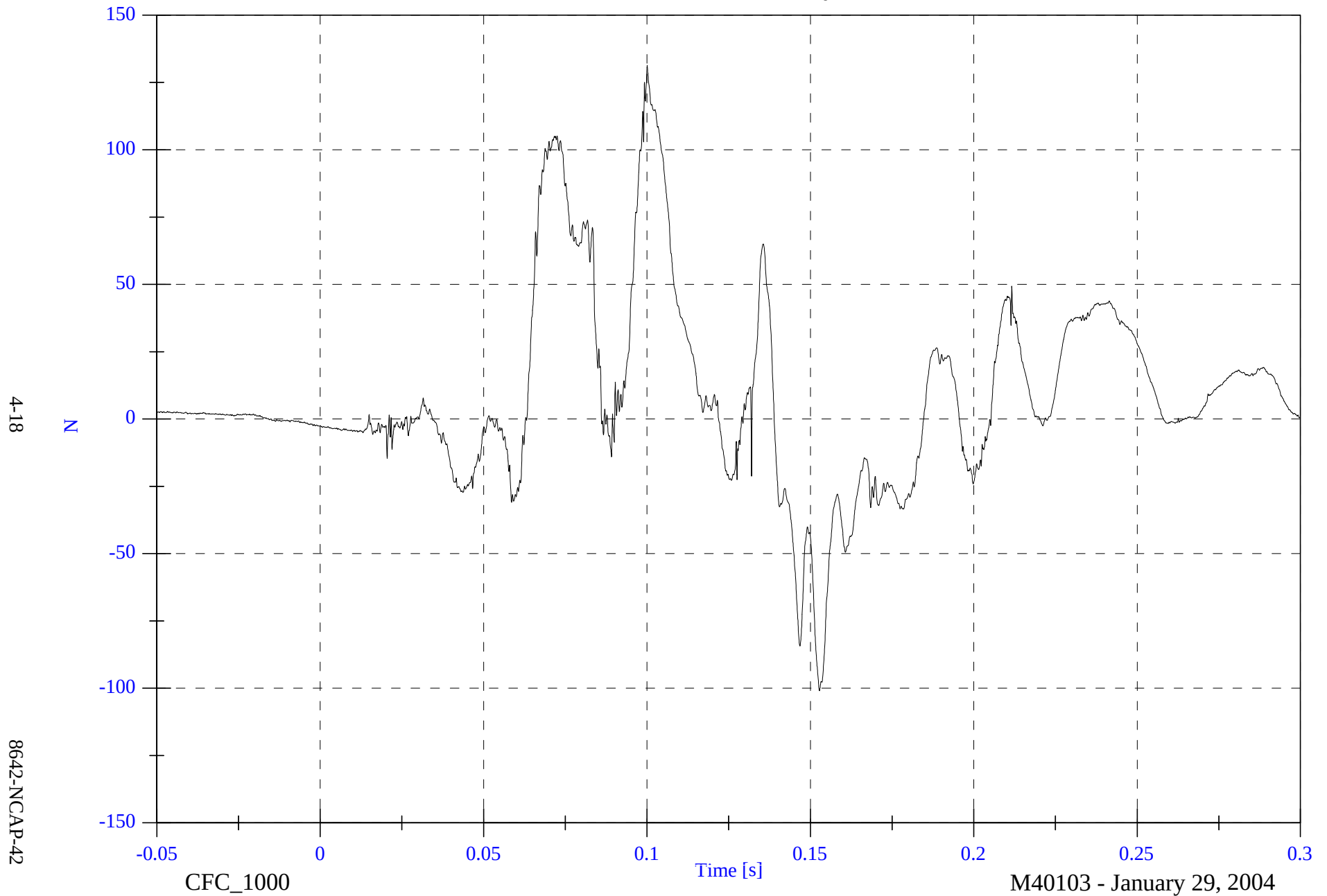


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Lower Neck Fy

Max: 131.4 [N] at 0.100 [s]

Min: -101.0 [N] at 0.153 [s]

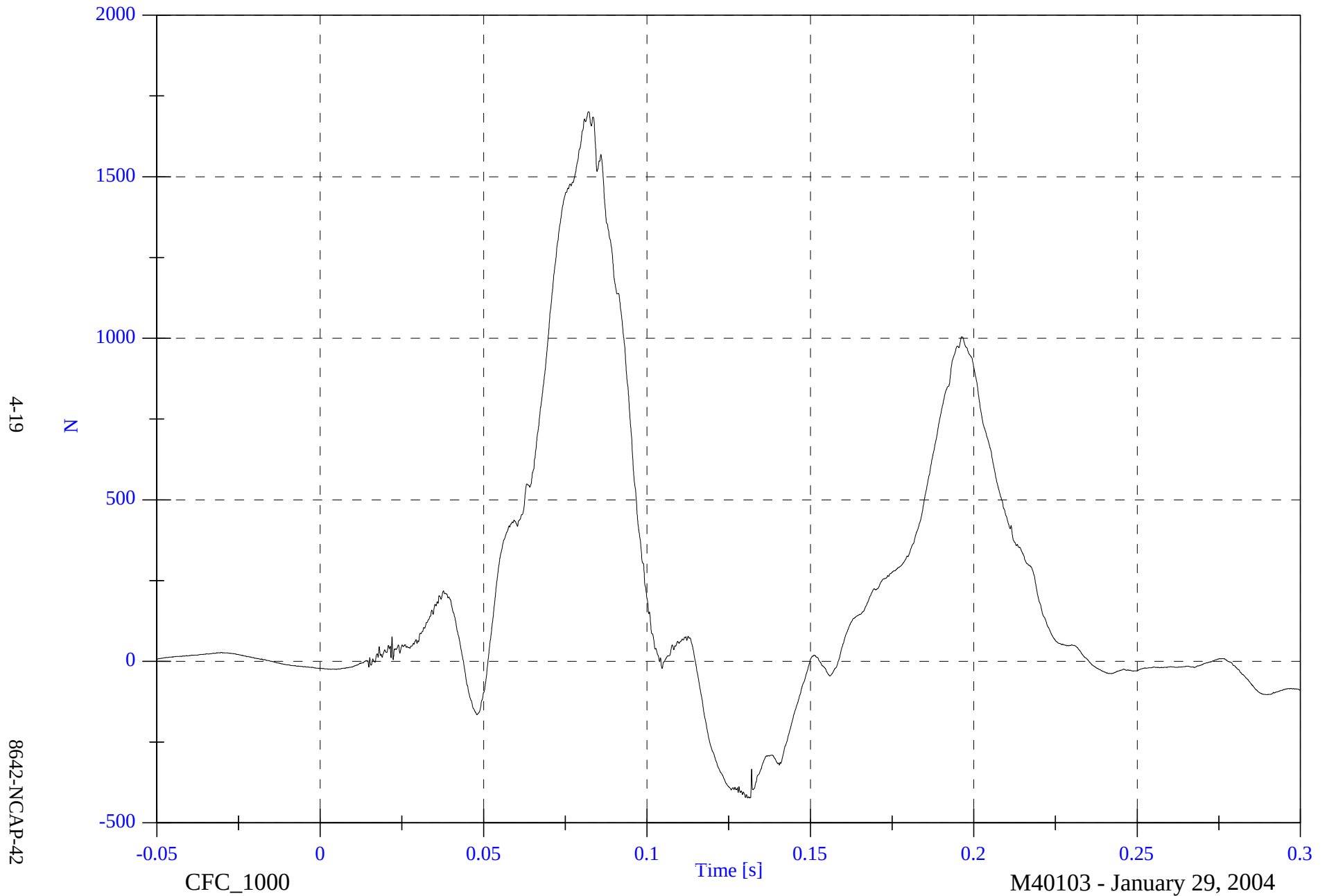


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Lower Neck Fz

Max: 1700.8 [N] at 0.082 [s]

Min: -423.0 [N] at 0.131 [s]

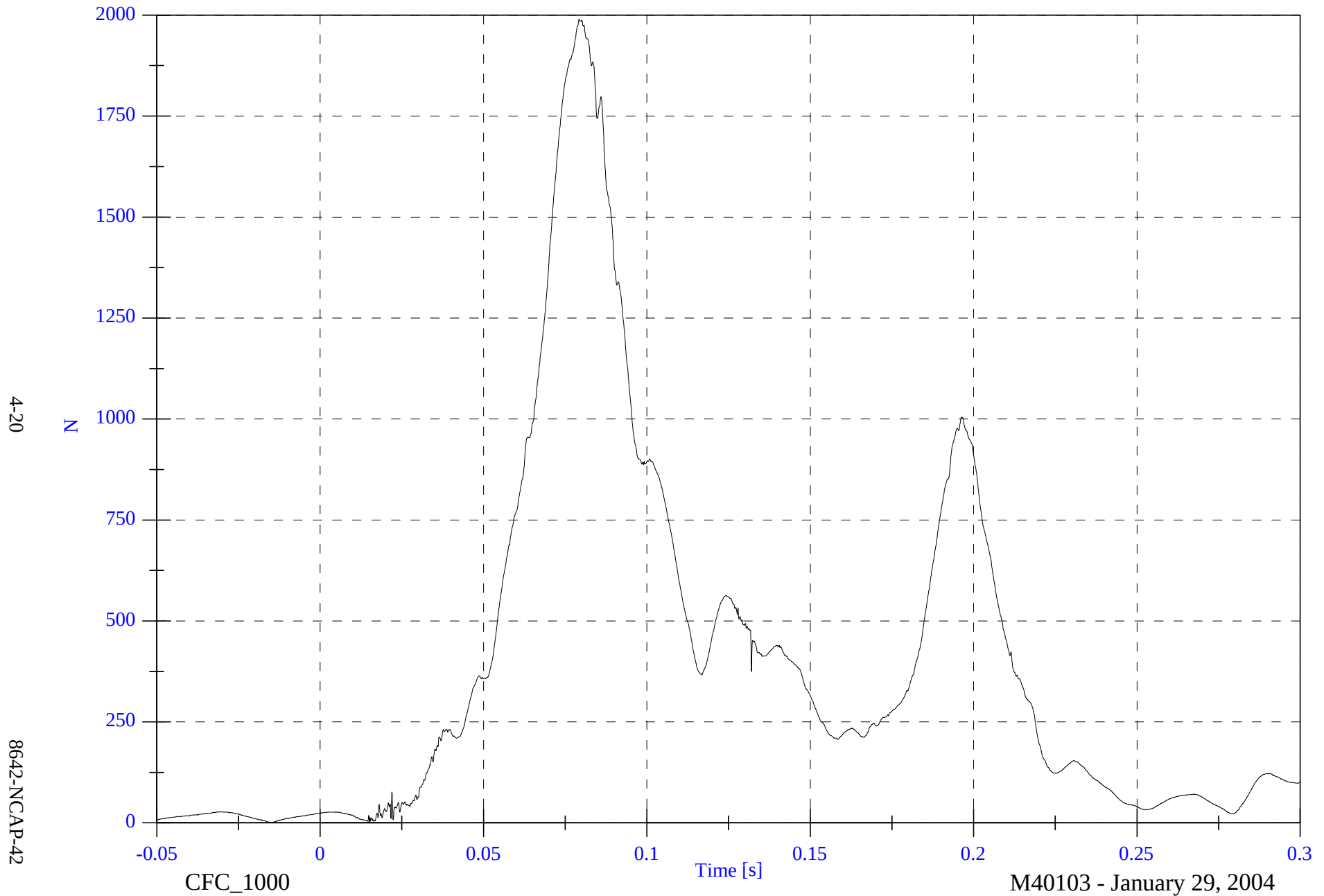


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Lower Neck F Resultant

Max: 1989.7 [N] at 0.079 [s]

Min: 0.7 [N] at -0.015 [s]

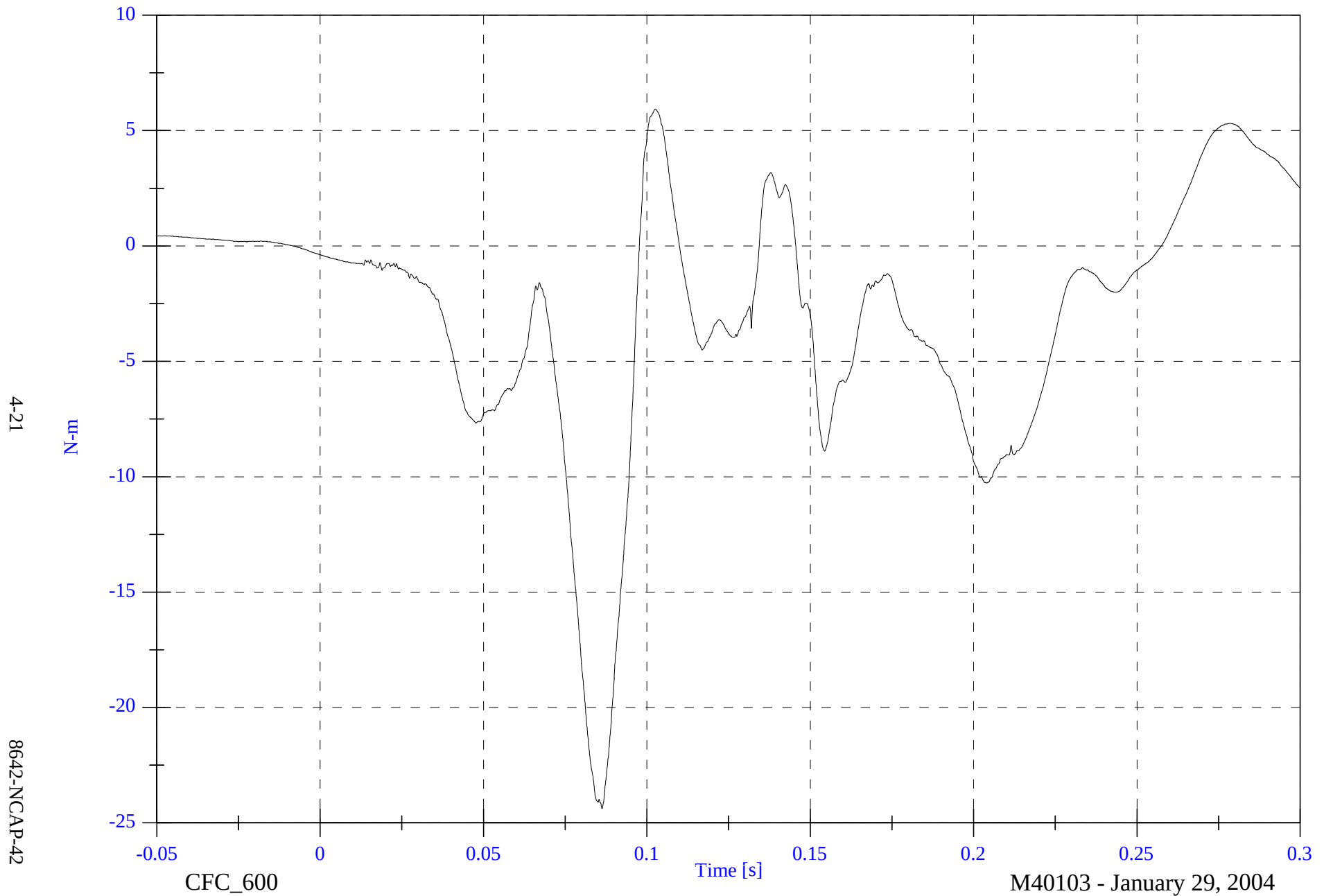


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Lower Neck Mx

Max: 5.9 [N-m] at 0.103 [s]

Min: -24.4 [N-m] at 0.086 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

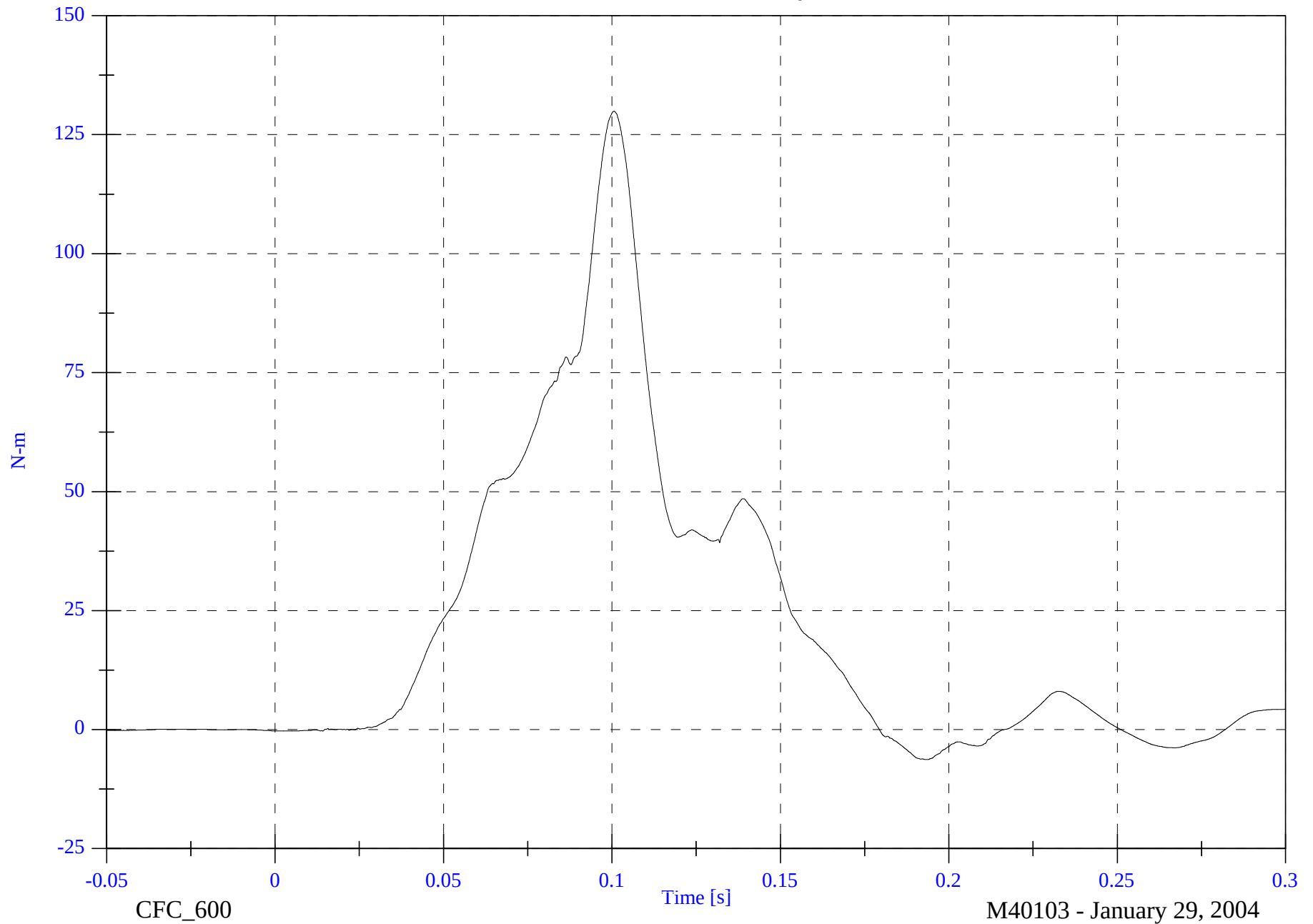
V1P3 Lower Neck My

Max: 129.9 [N-m] at 0.101 [s]

Min: -6.3 [N-m] at 0.194 [s]

4-22

8642-NCAP-42

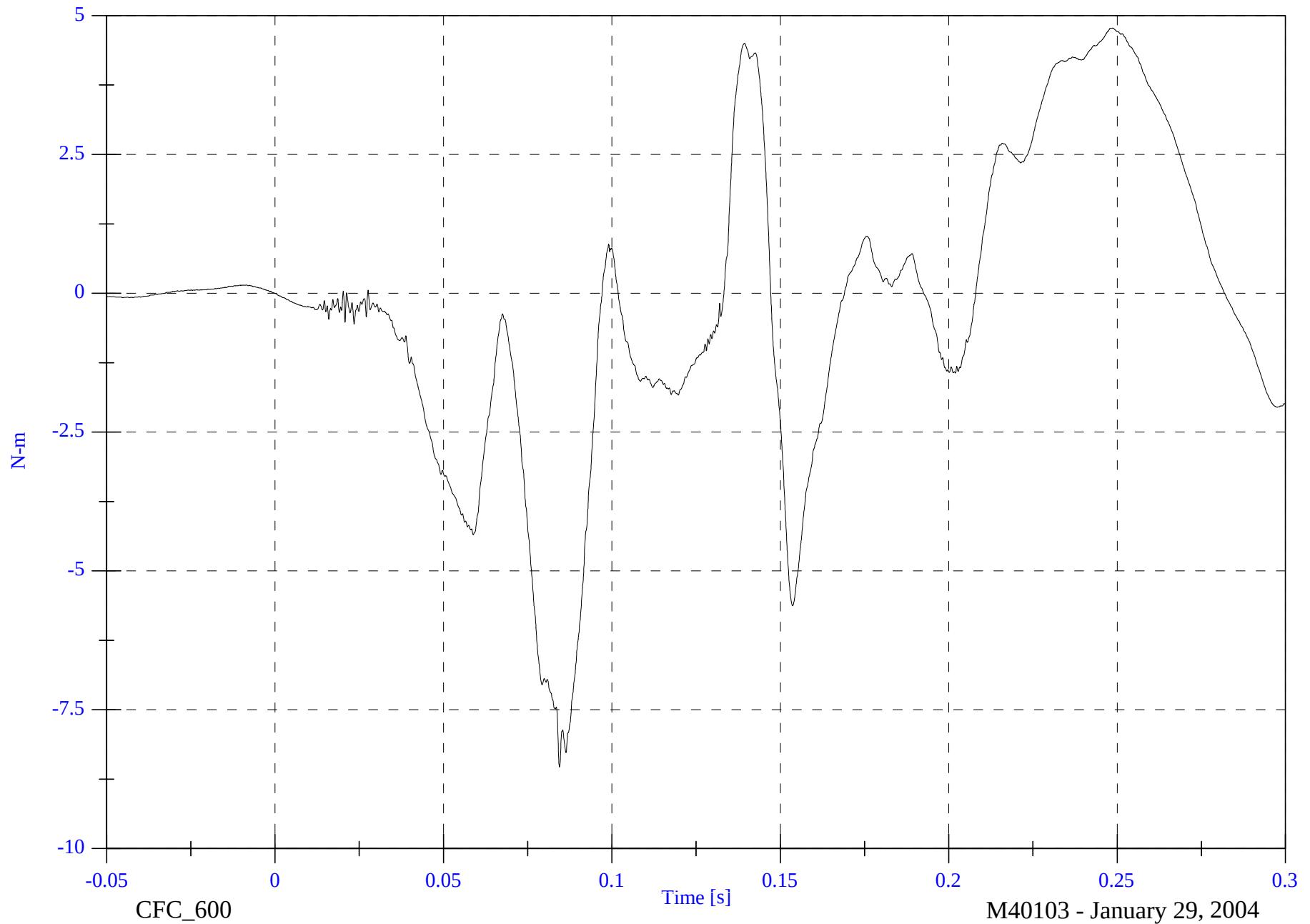


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Lower Neck Mz

Max: 4.8 [N-m] at 0.249 [s]

Min: -8.5 [N-m] at 0.084 [s]



4-23

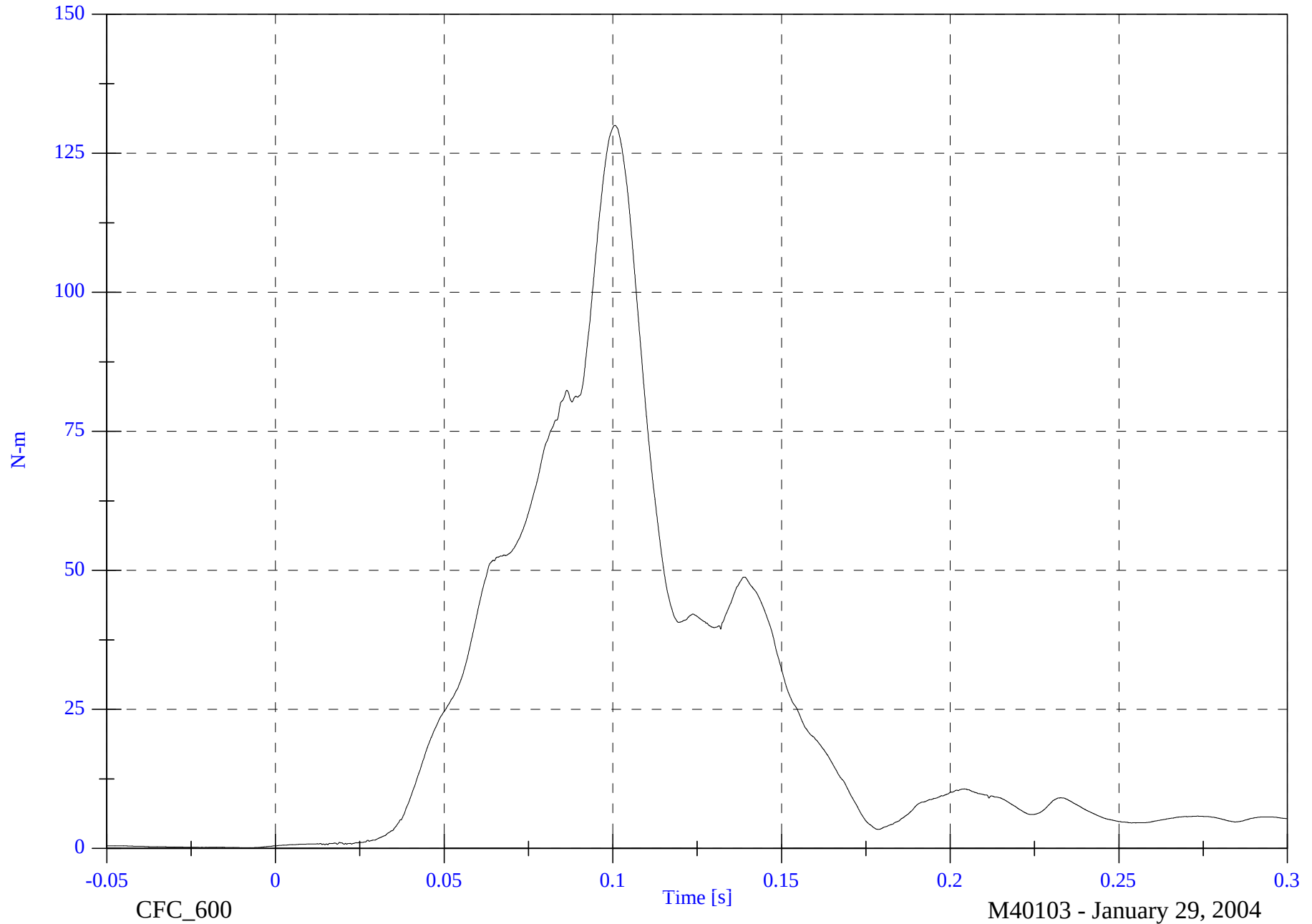
8642-NCAP-42

2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Lower Neck M Resultant

Max: 130.0 [N-m] at 0.101 [s]

Min: 0.1 [N-m] at -0.008 [s]



4-24

8642-NCAP-42

CFC_600

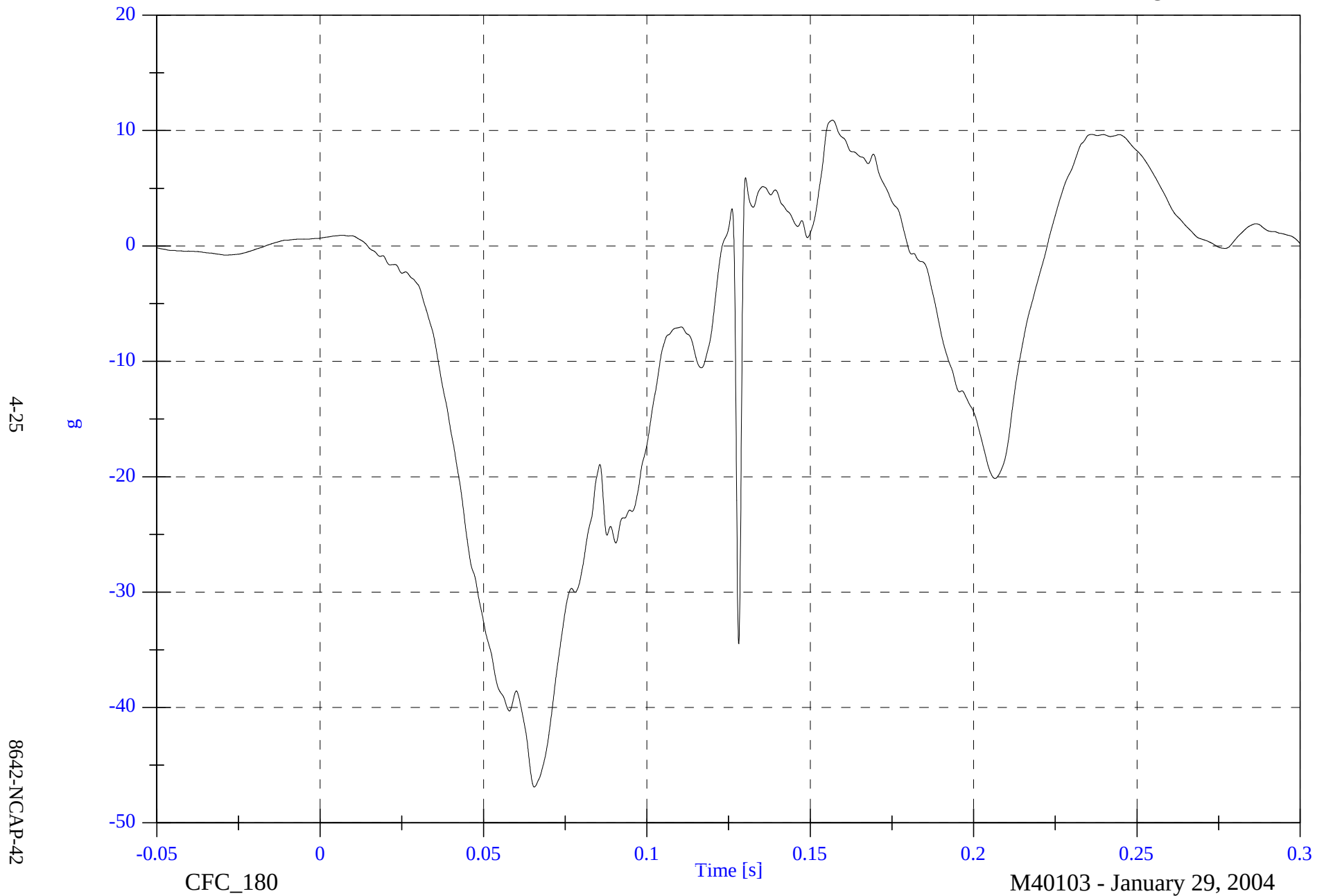
M40103 - January 29, 2004

2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Chest x

Max: 10.9 [g] at 0.157 [s]

Min: -46.9 [g] at 0.065 [s]

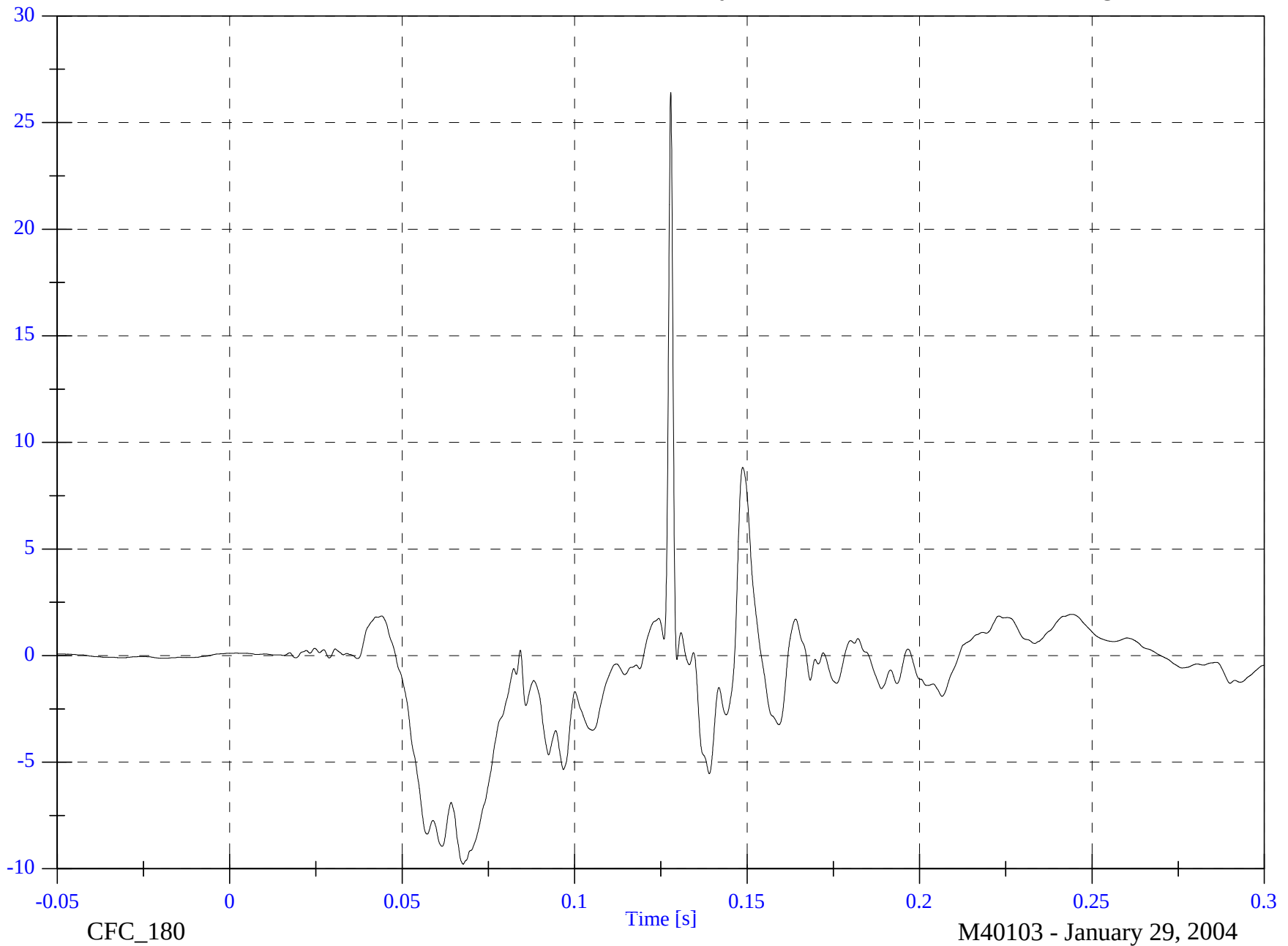


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Chest y

Max: 26.4 [g] at 0.128 [s]

Min: -9.8 [g] at 0.068 [s]



4-26

8642-NCAP-42

CFC_180

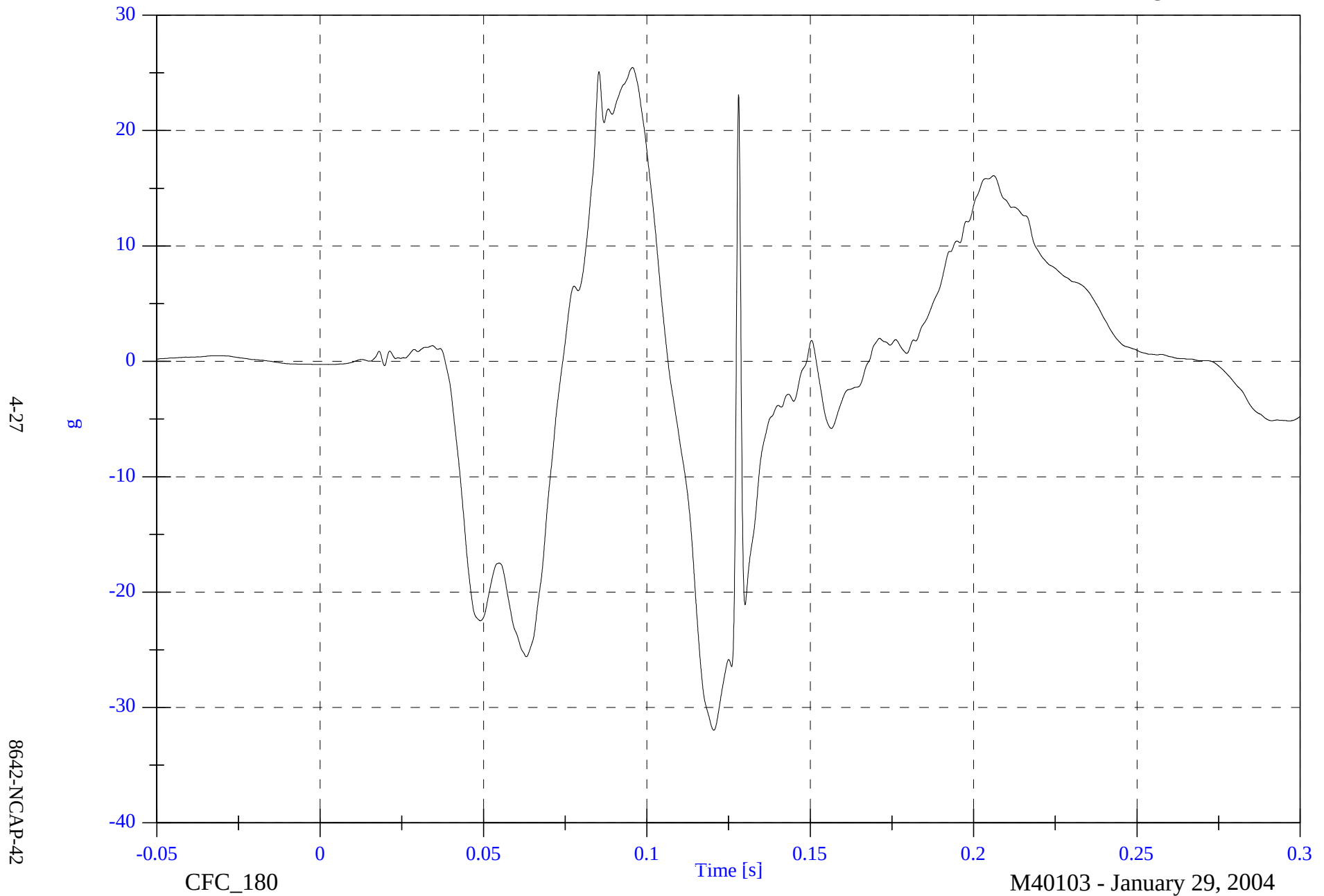
M40103 - January 29, 2004

2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Chest z

Max: 25.5 [g] at 0.096 [s]

Min: -32.0 [g] at 0.120 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

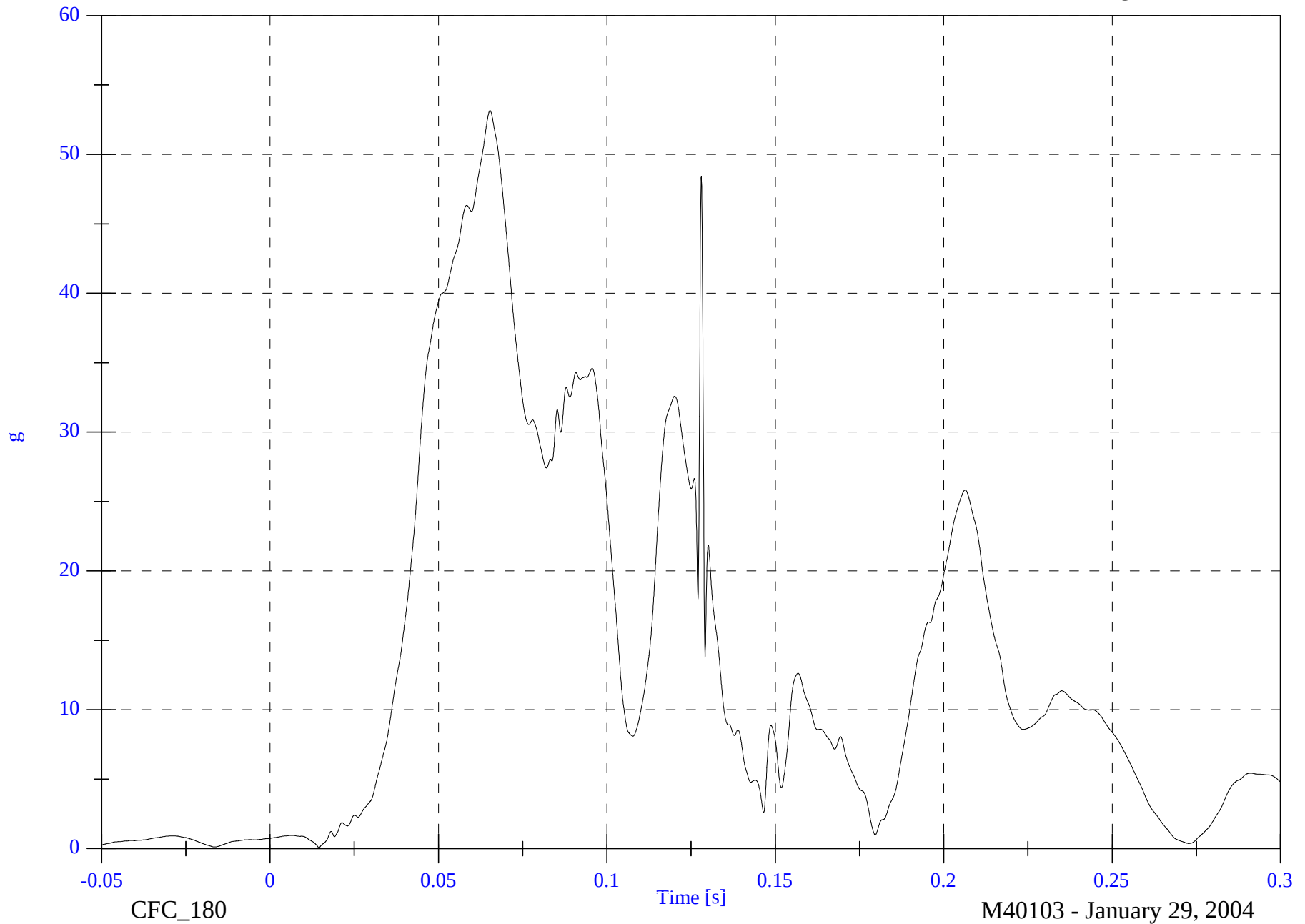
V1P3 Chest Resultant

Max: 53.2 [g] at 0.065 [s]

Min: 0.1 [g] at 0.015 [s]

4-28

8642-NCAP-42

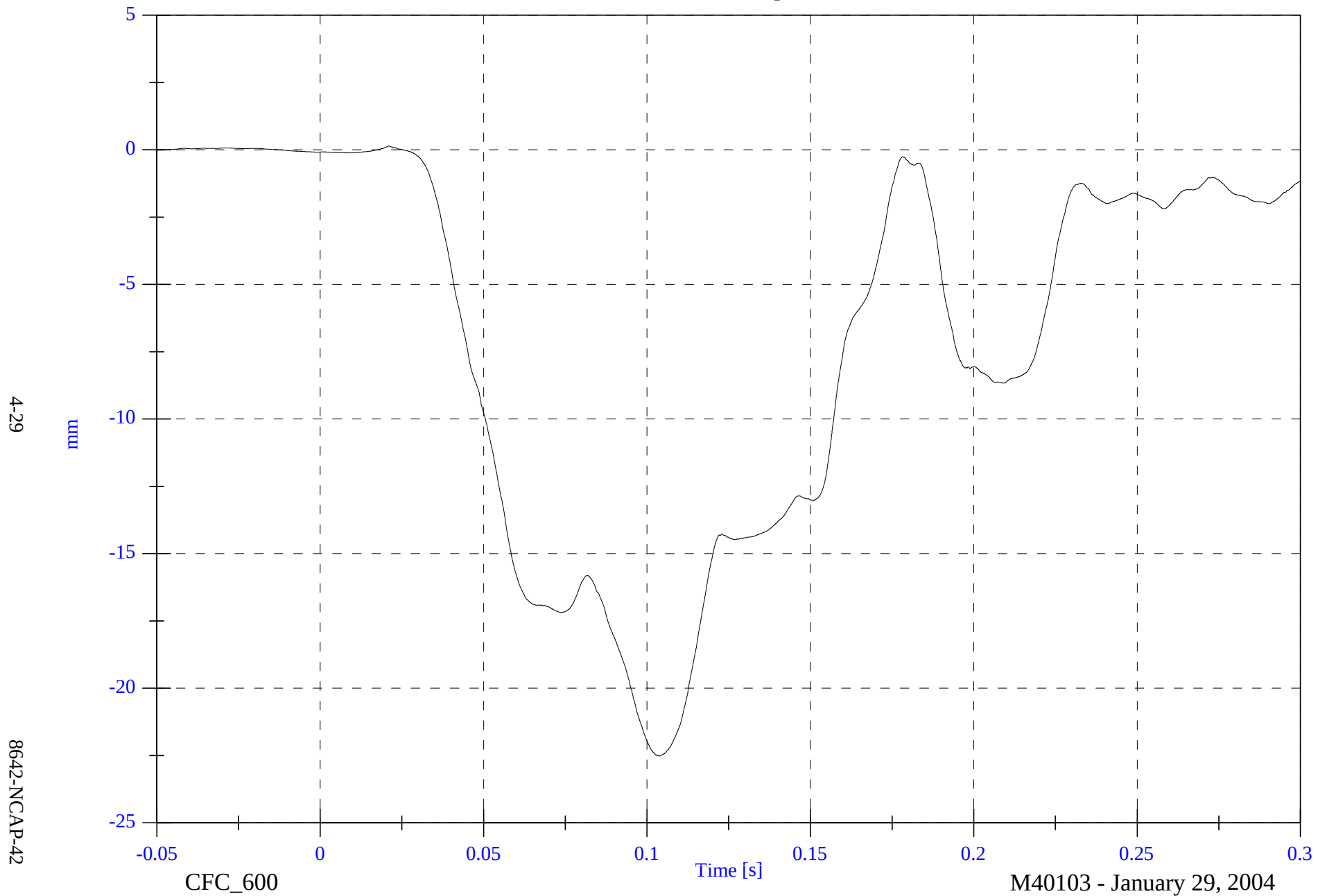


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Chest Compression

Max: 0.1 [mm] at 0.021 [s]

Min: -22.5 [mm] at 0.104 [s]

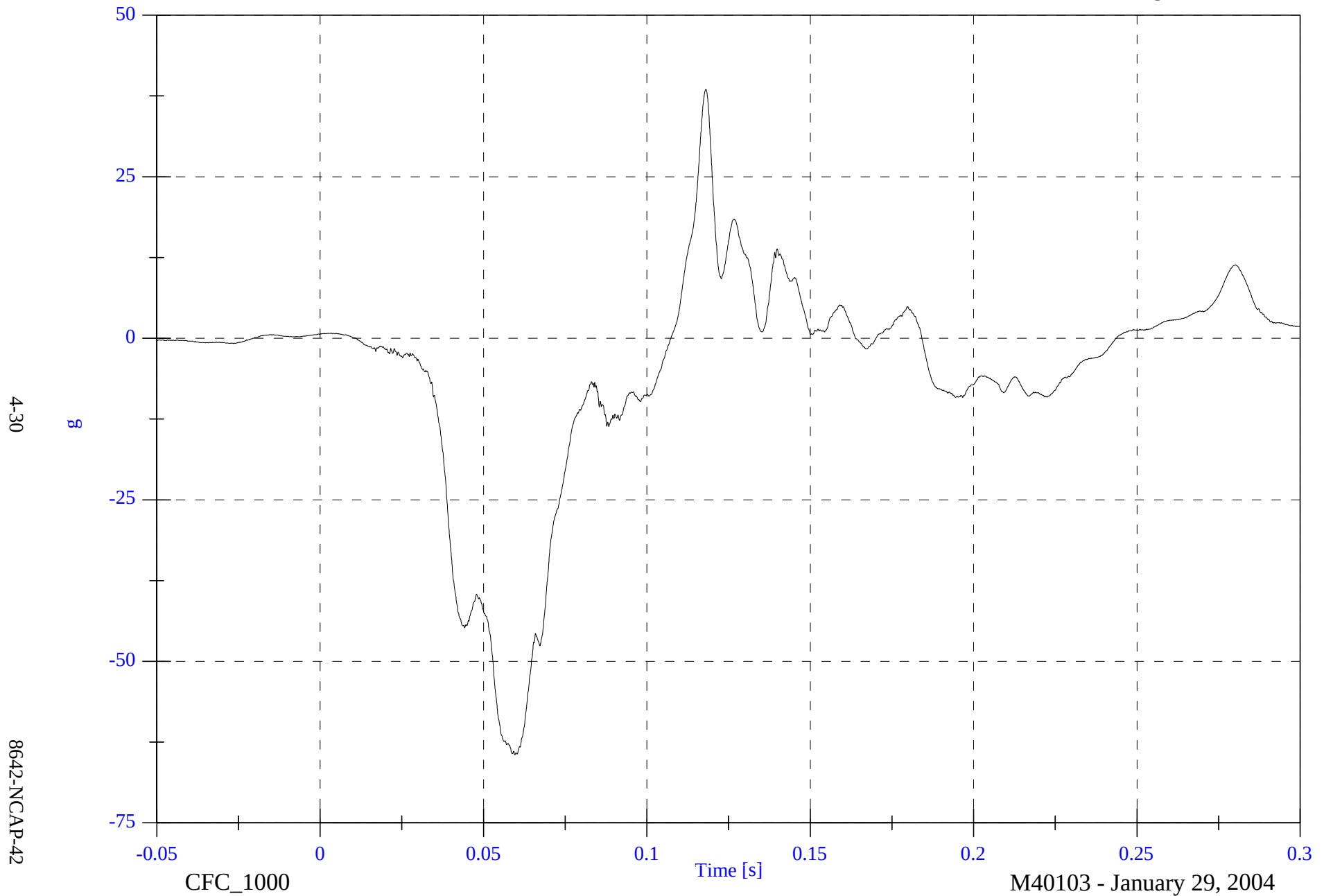


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Pelvic x

Max: 38.5 [g] at 0.118 [s]

Min: -64.5 [g] at 0.060 [s]

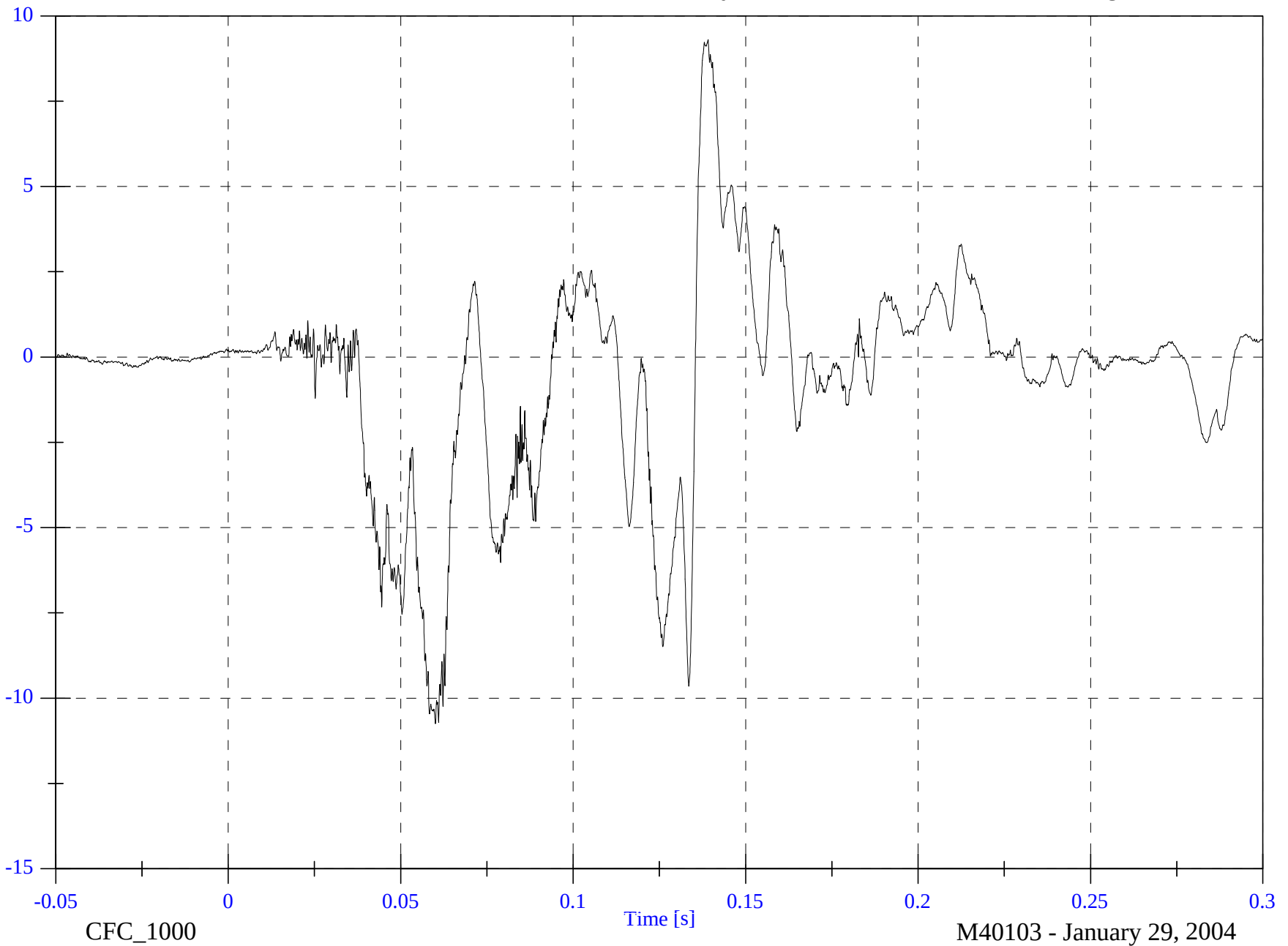


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Pelvic y

Max: 9.3 [g] at 0.139 [s]

Min: -10.7 [g] at 0.060 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

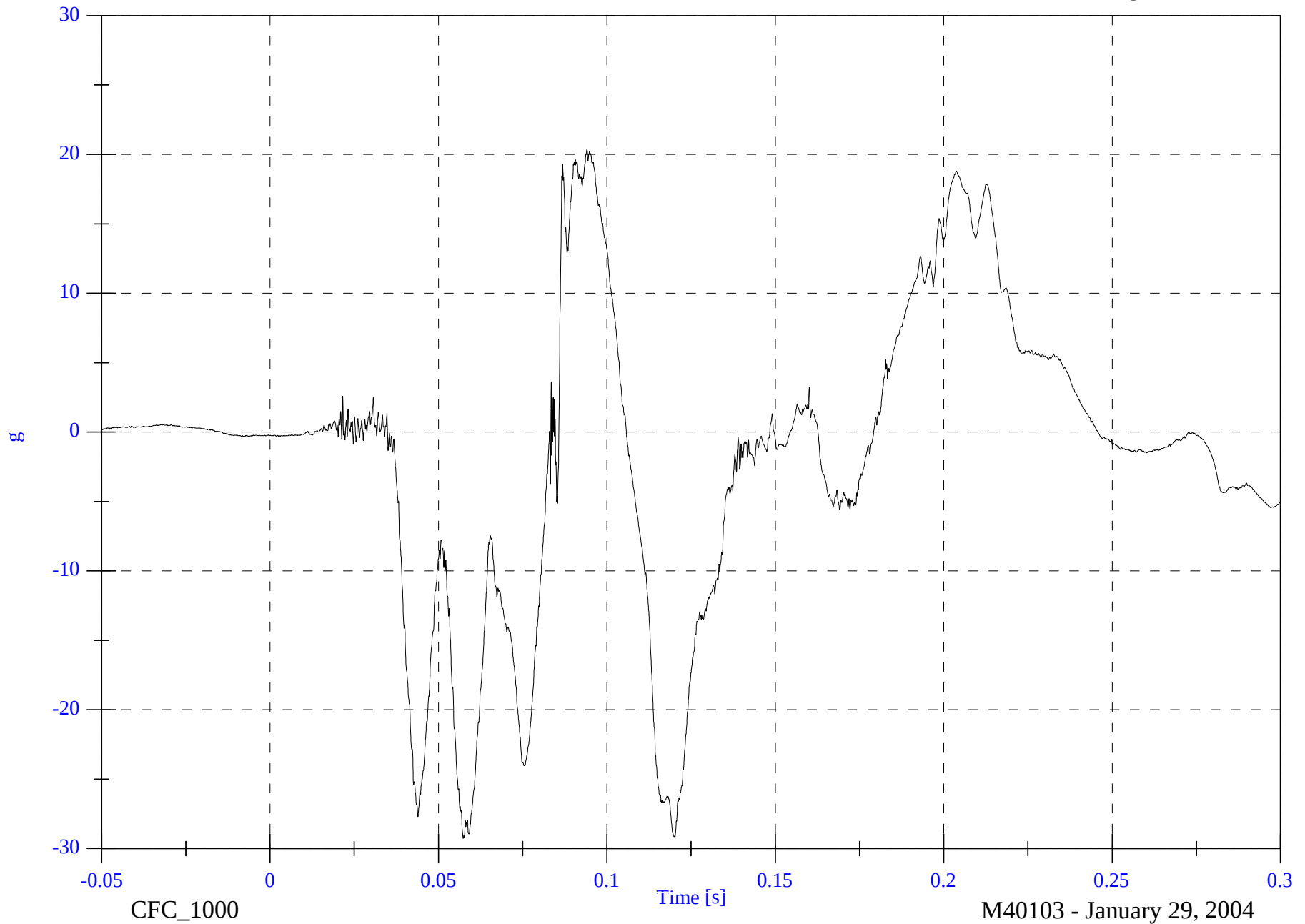
V1P3 Pelvic z

Max: 20.3 [g] at 0.094 [s]

Min: -29.3 [g] at 0.057 [s]

4-32

8642-NCAP-42

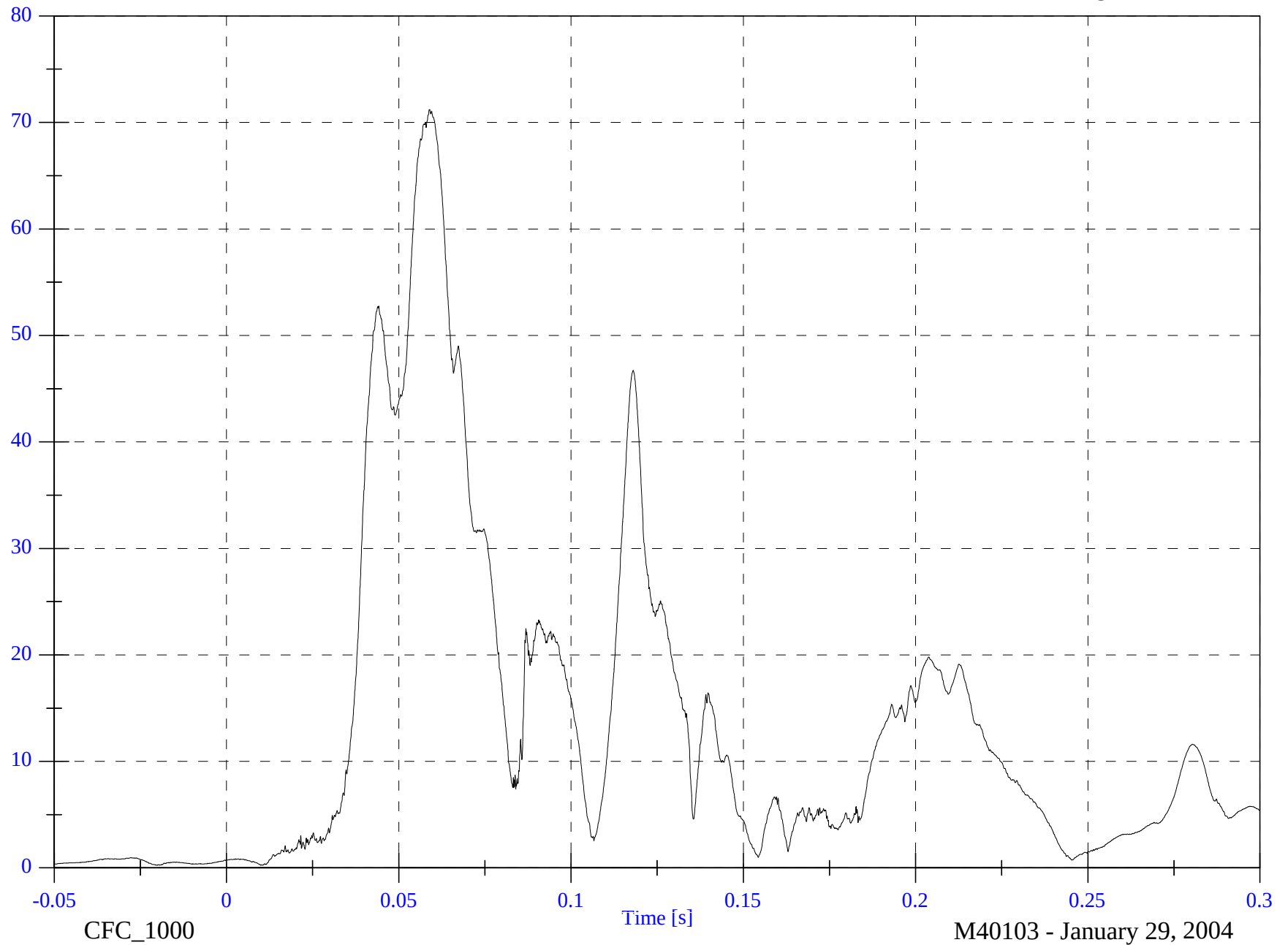


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Pelvic Resultant

Max: 71.2 [g] at 0.059 [s]

Min: 0.2 [g] at 0.010 [s]



4-33

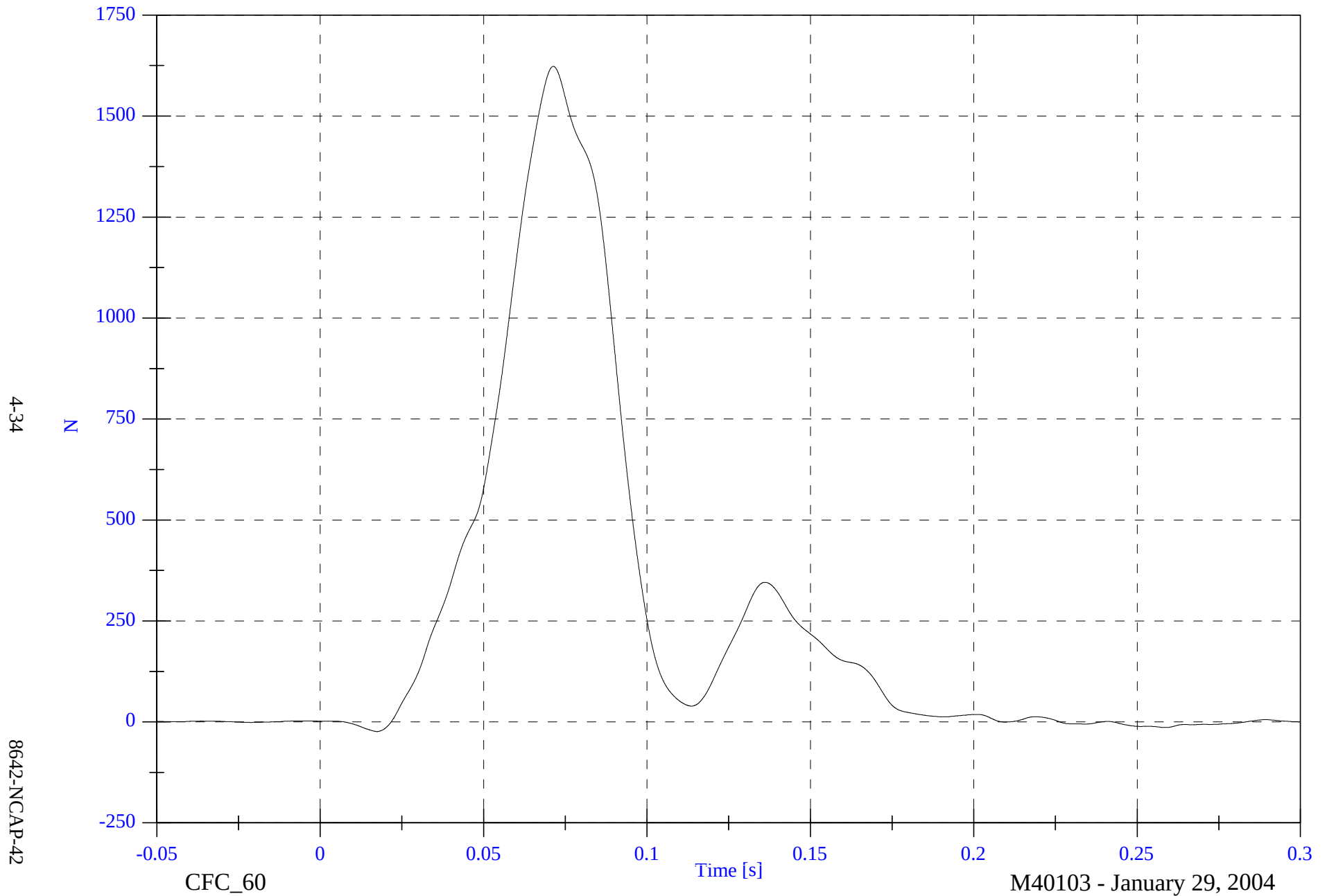
8642-NCAP-42

2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Tether Belt

Max: 1623.1 [N] at 0.071 [s]

Min: -23.8 [N] at 0.017 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Head x

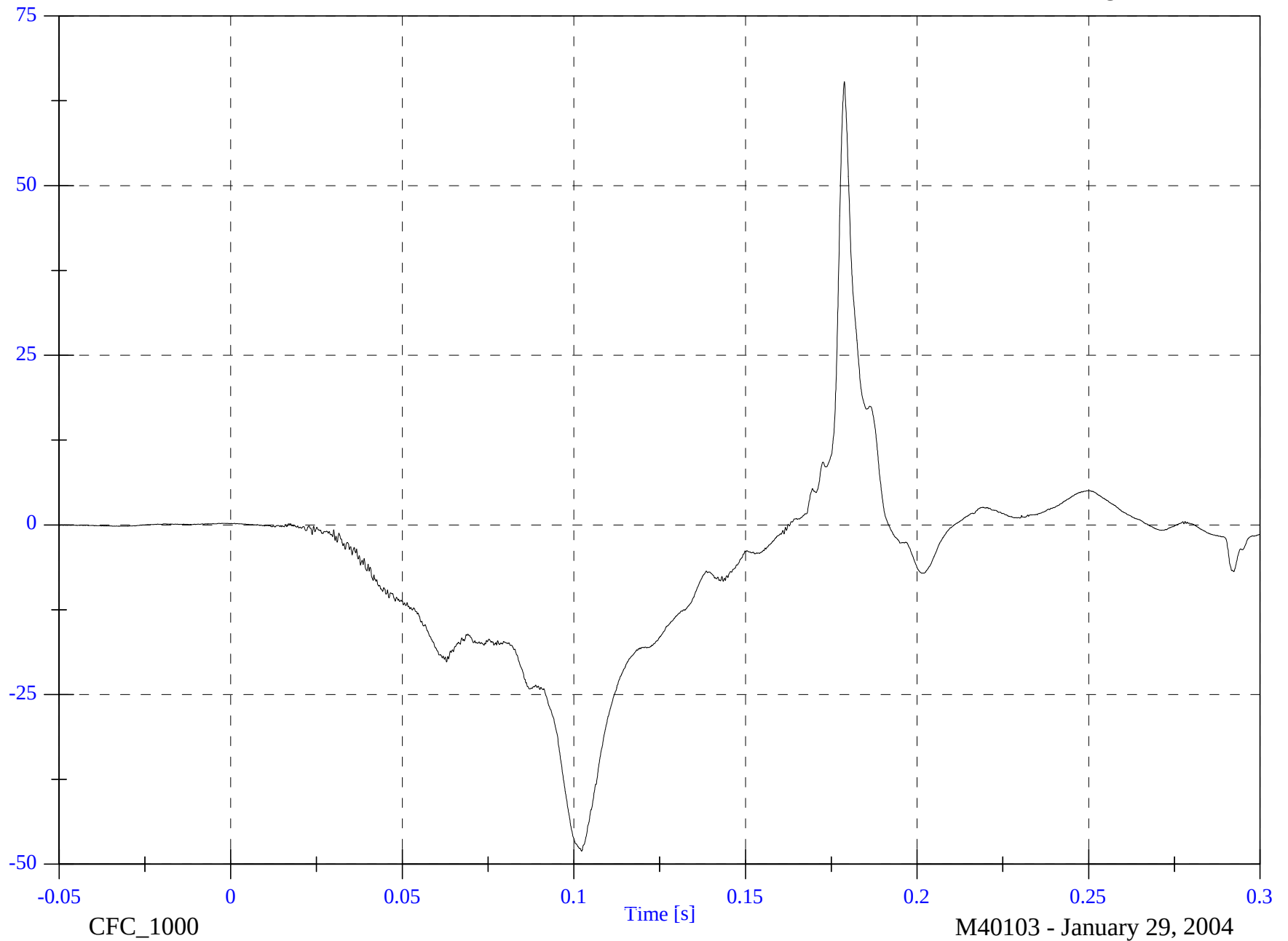
Max: 65.3 [g] at 0.179 [s]

Min: -48.1 [g] at 0.102 [s]

4-35

g

8642-NCAP-42

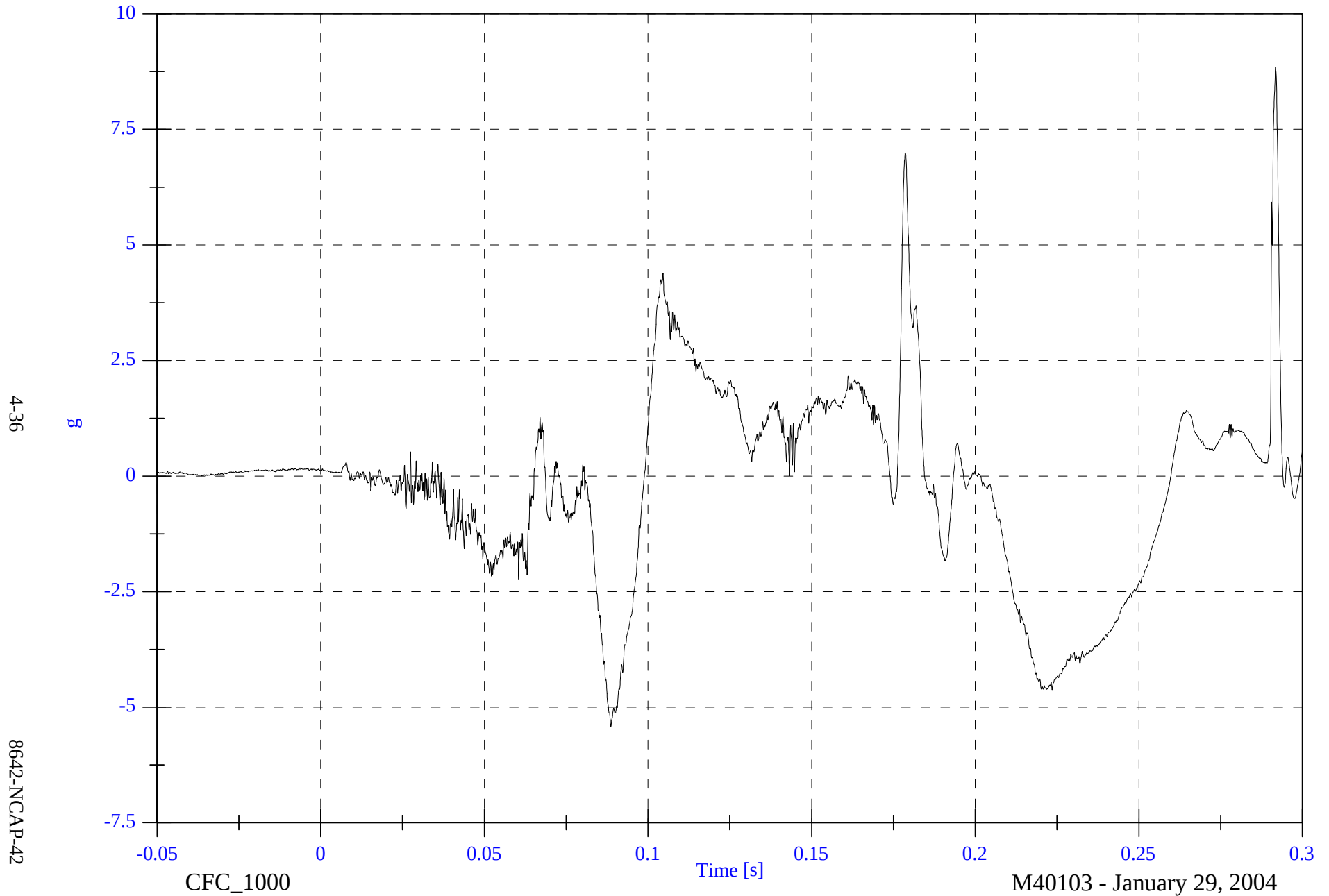


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Head y

Max: 8.8 [g] at 0.292 [s]

Min: -5.4 [g] at 0.089 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

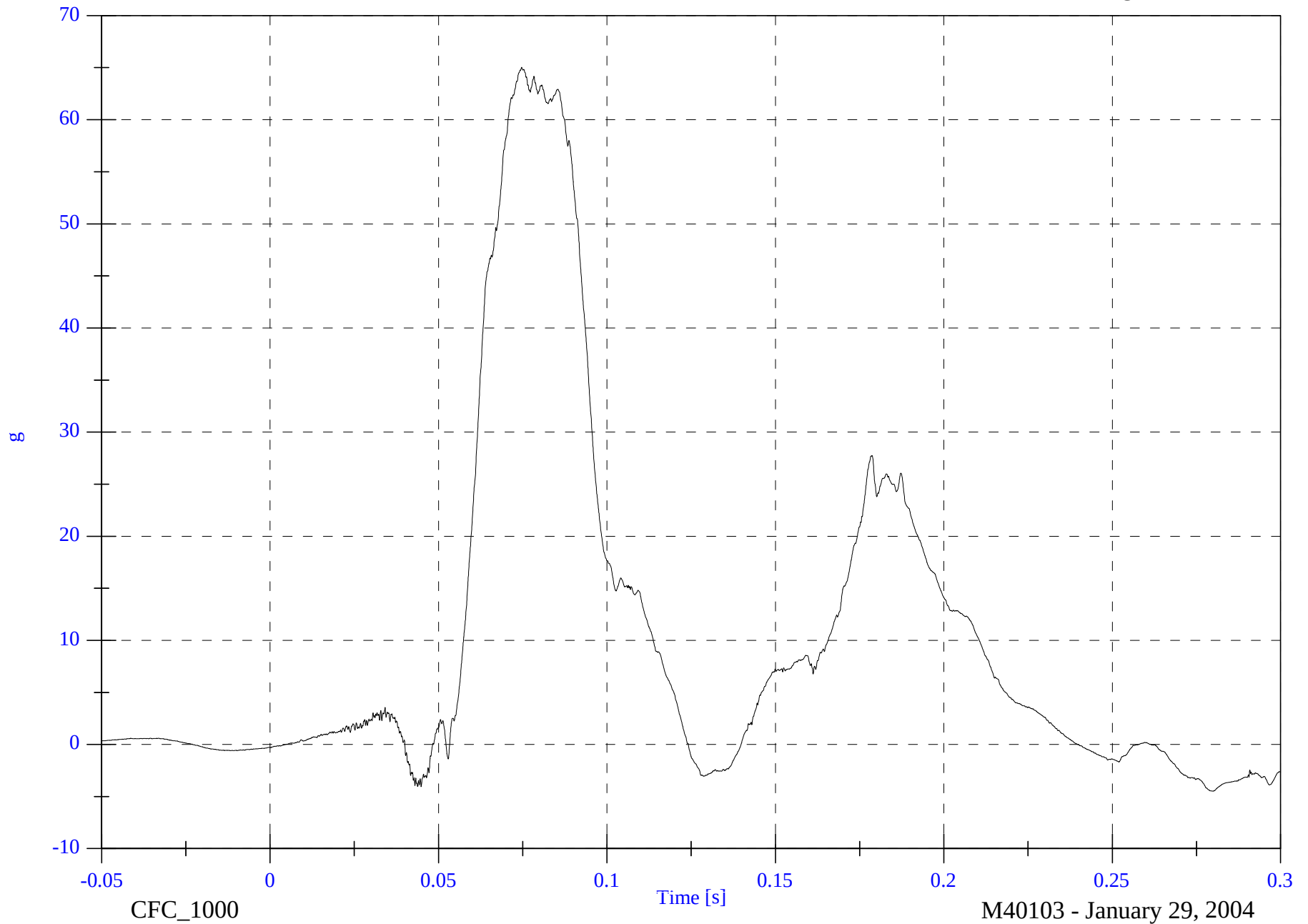
V1P4 Head z

Max: 65.0 [g] at 0.075 [s]

Min: -4.5 [g] at 0.280 [s]

4-37

8642-NCAP-42

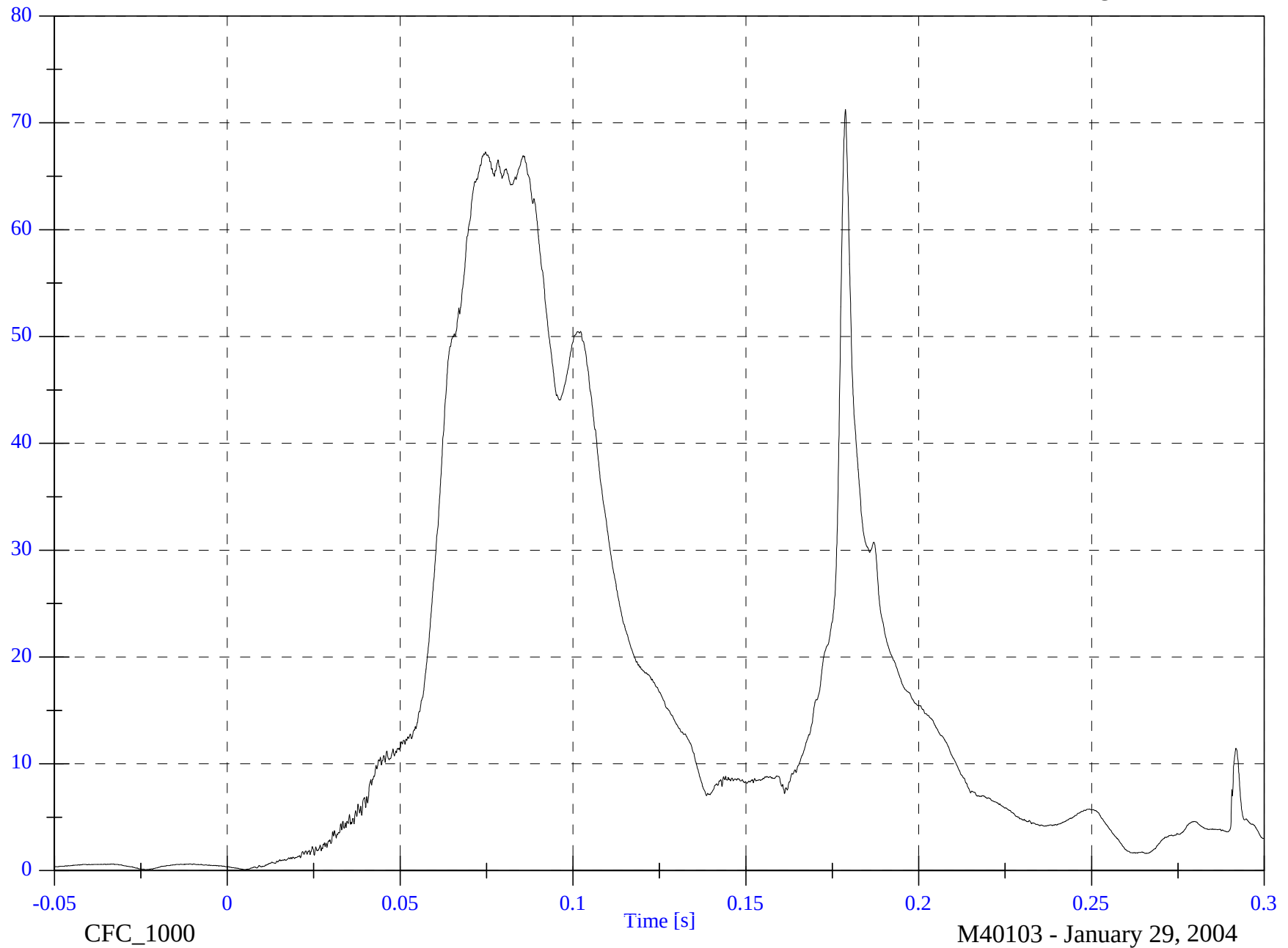


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Head Resultant

Max: 71.3 [g] at 0.179 [s]

Min: 0.1 [g] at -0.024 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

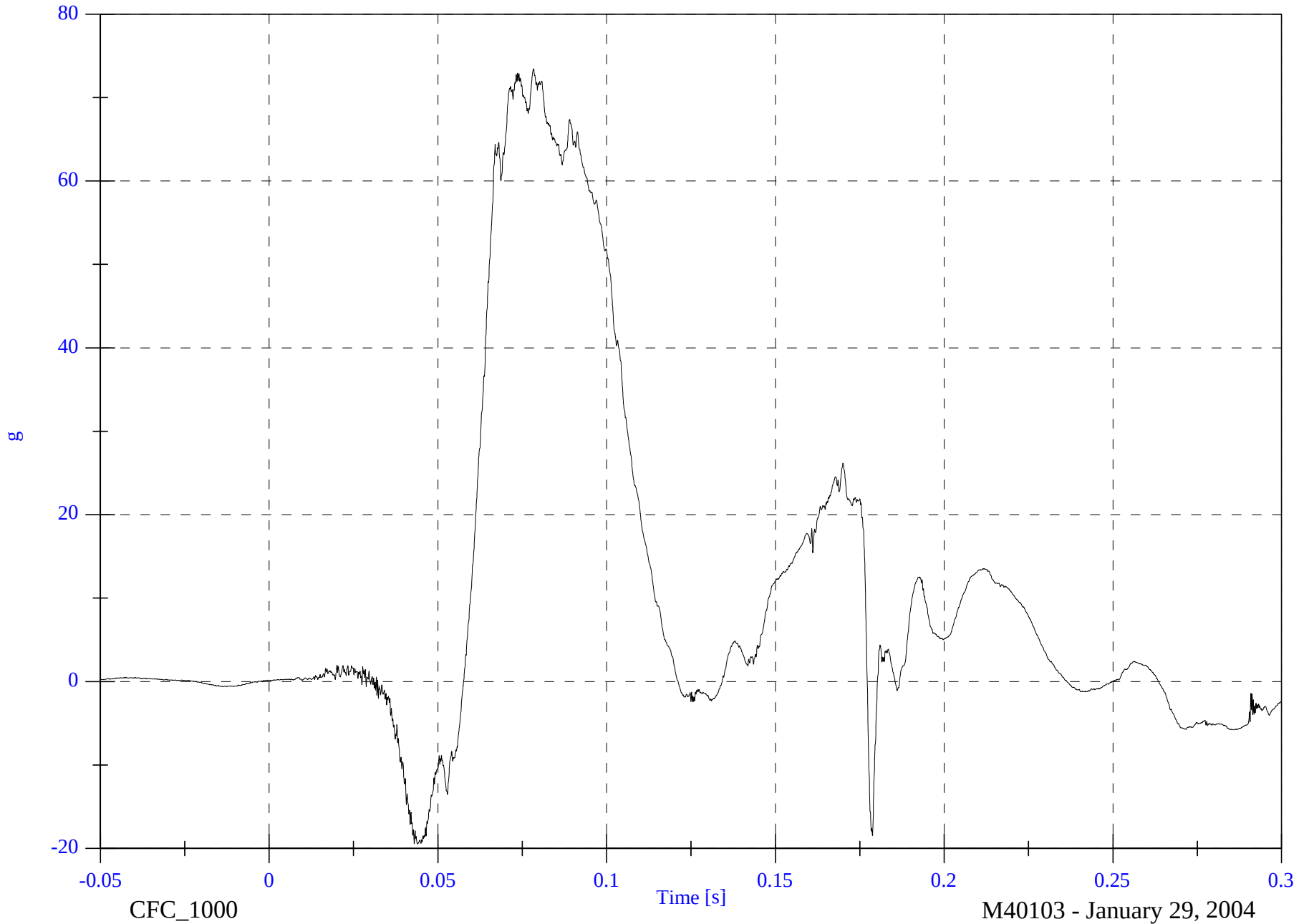
V1P4 Head Rear z

Max: 73.5 [g] at 0.078 [s]

Min: -19.4 [g] at 0.044 [s]

4-39

8642-NCAP-42

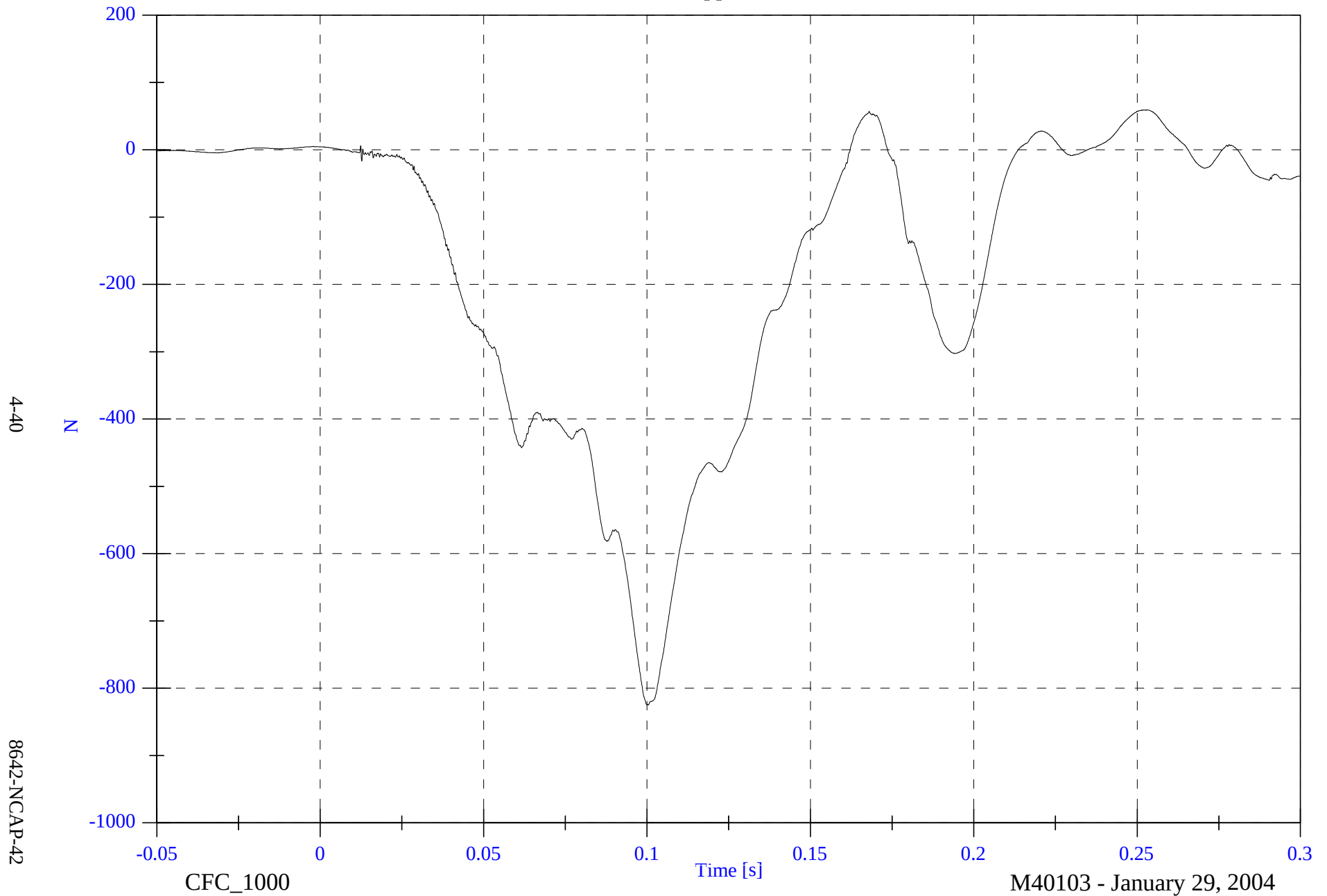


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Upper Neck Fx

Max: 59.3 [N] at 0.253 [s]

Min: -824.7 [N] at 0.100 [s]

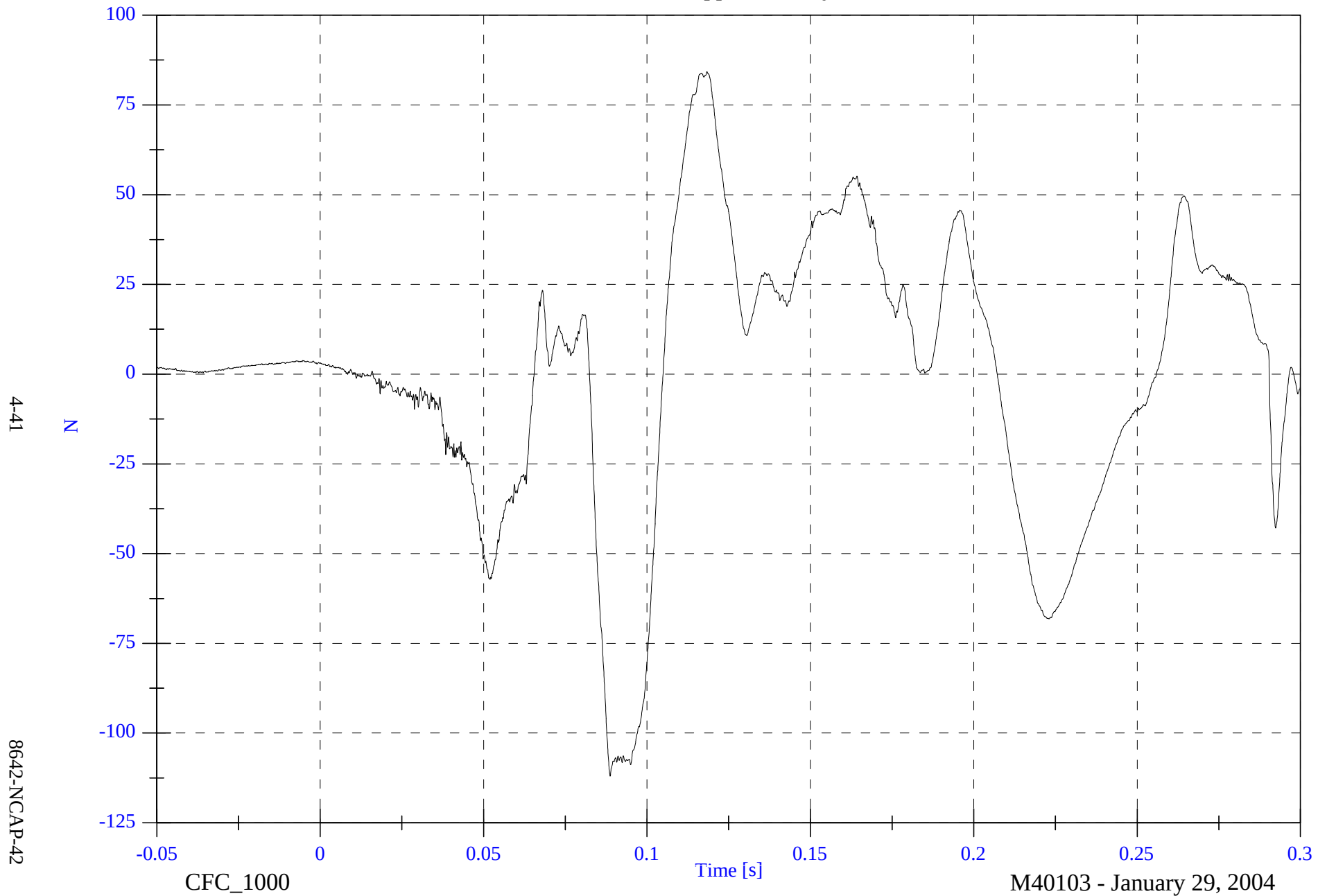


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Upper Neck Fy

Max: 84.2 [N] at 0.118 [s]

Min: -112.0 [N] at 0.089 [s]

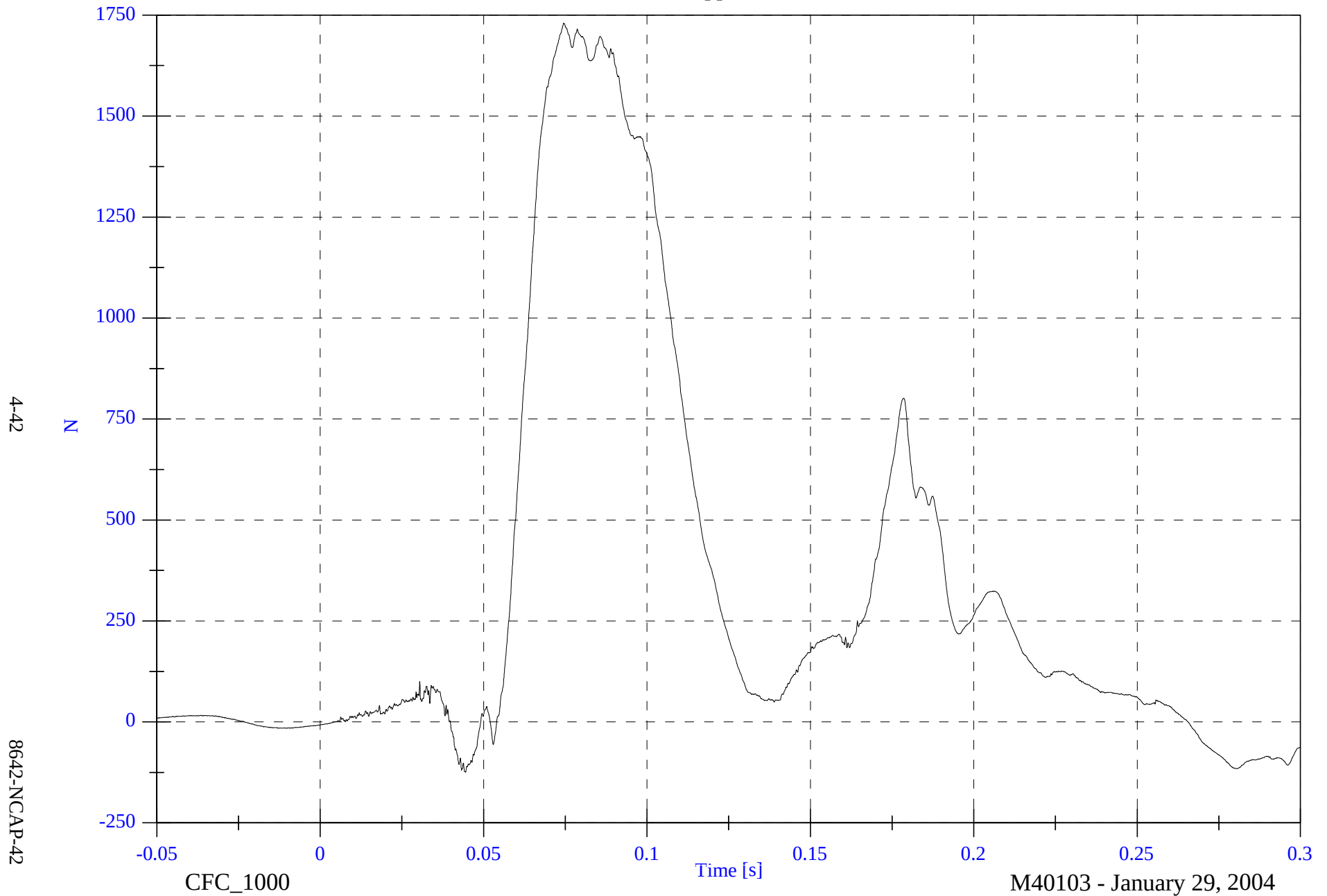


2004 NCAP Test 6 2004 Chevrolet Colorado

Max: 1730.3 [N] at 0.075 [s]

V1P4 Upper Neck Fz

Min: -124.2 [N] at 0.045 [s]

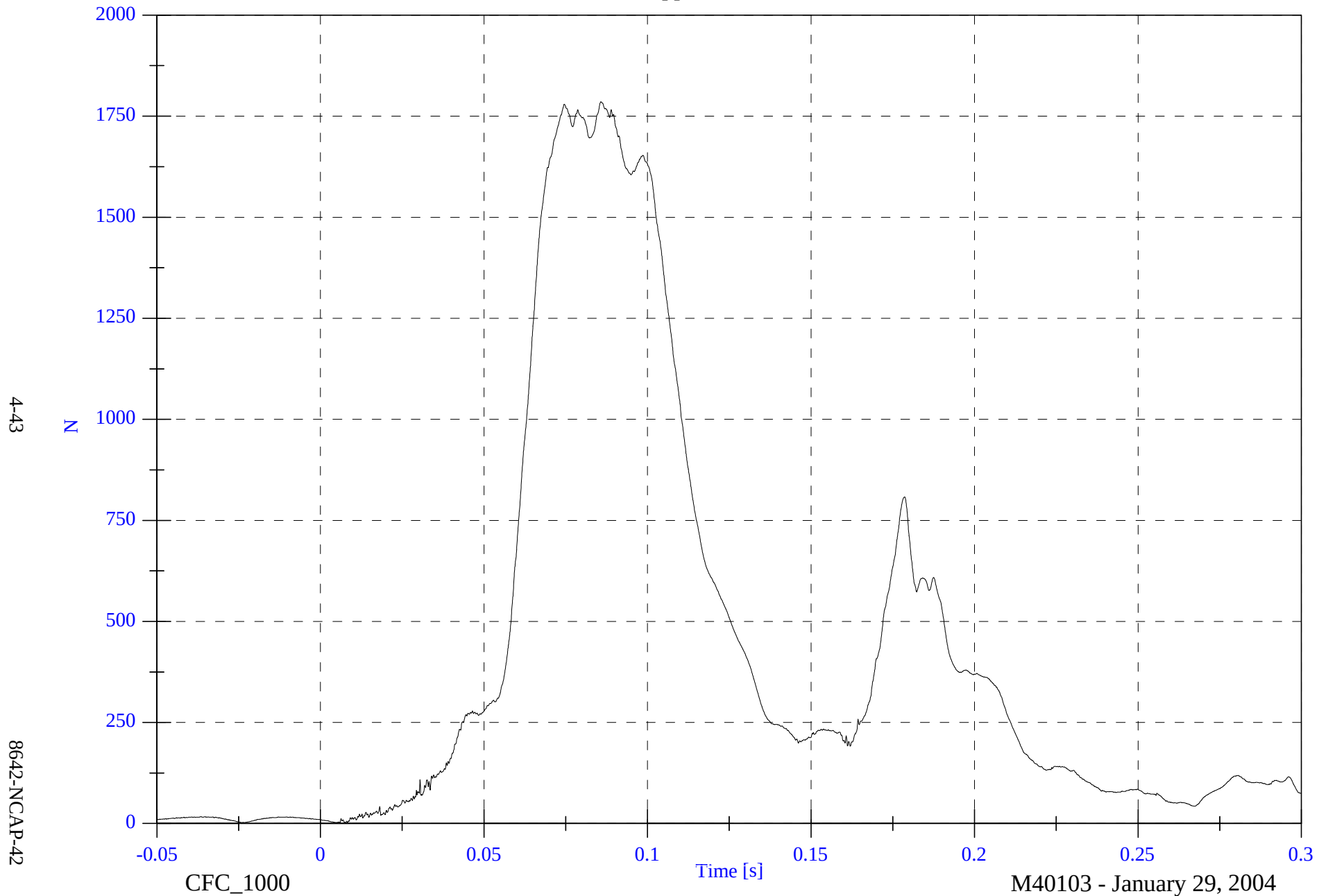


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Upper Neck F Resultant

Max: 1785.5 [N] at 0.086 [s]

Min: 1.0 [N] at 0.008 [s]

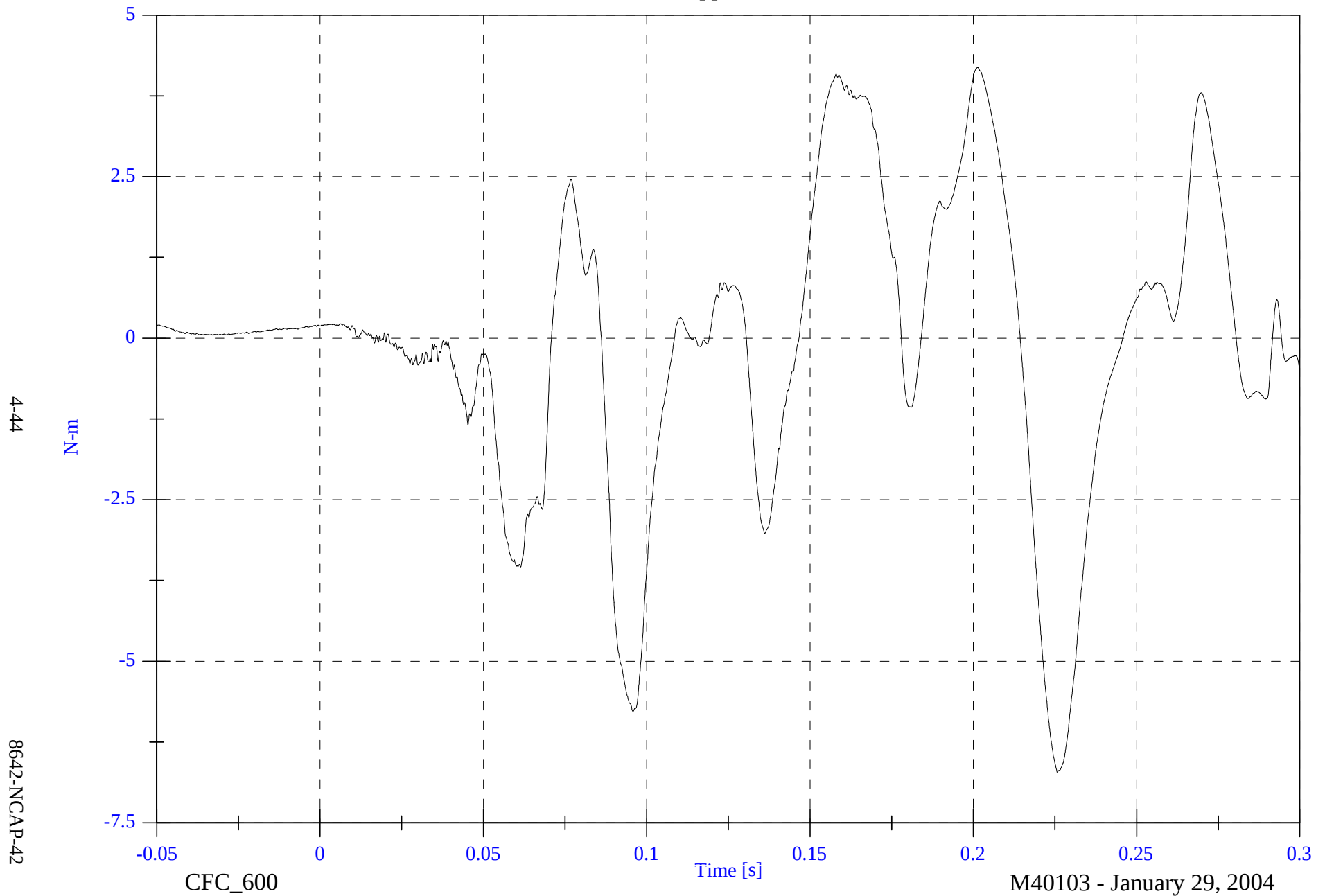


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Upper Neck Mx

Max: 4.2 [N-m] at 0.201 [s]

Min: -6.7 [N-m] at 0.226 [s]

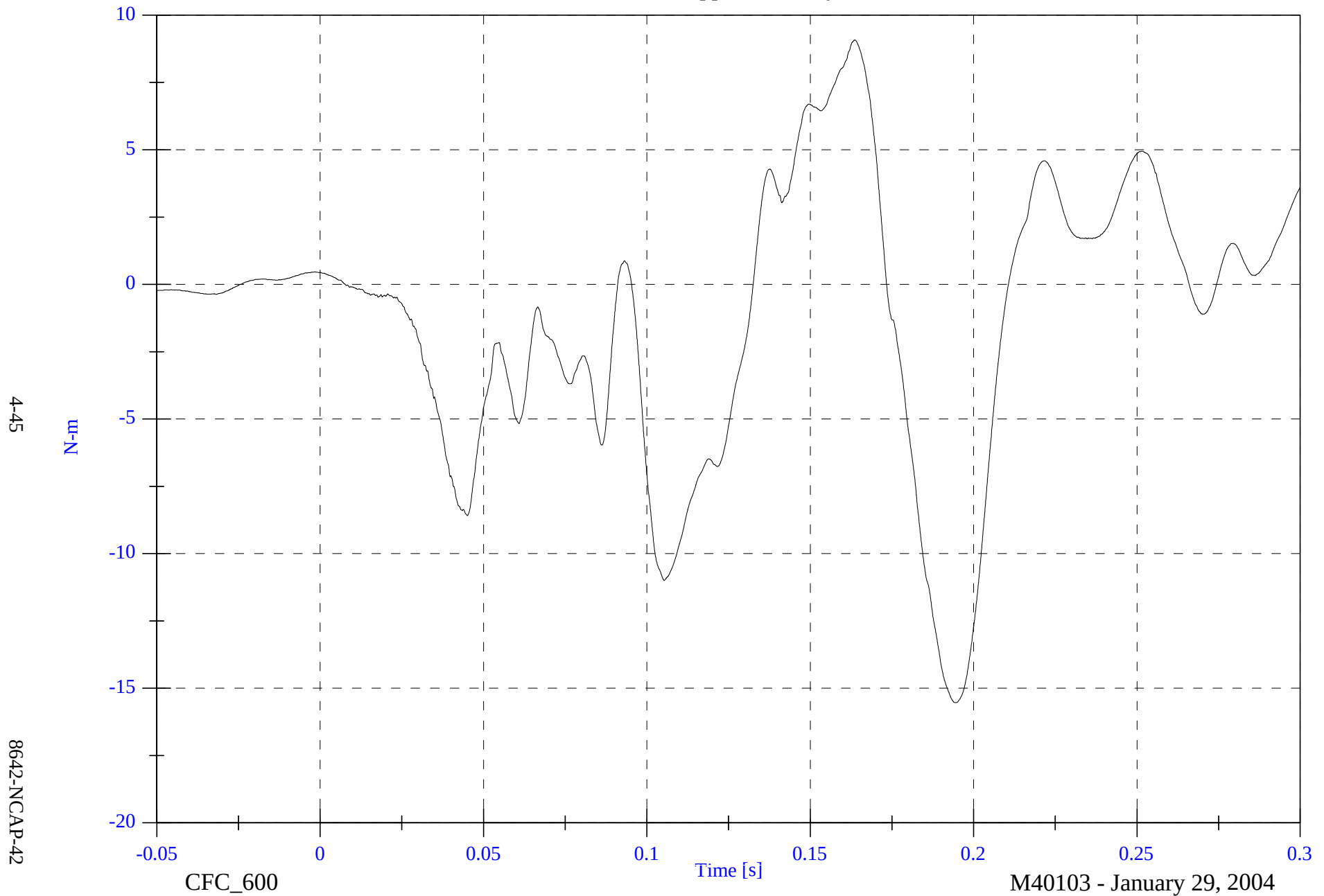


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Upper Neck My

Max: 9.1 [N-m] at 0.164 [s]

Min: -15.5 [N-m] at 0.194 [s]

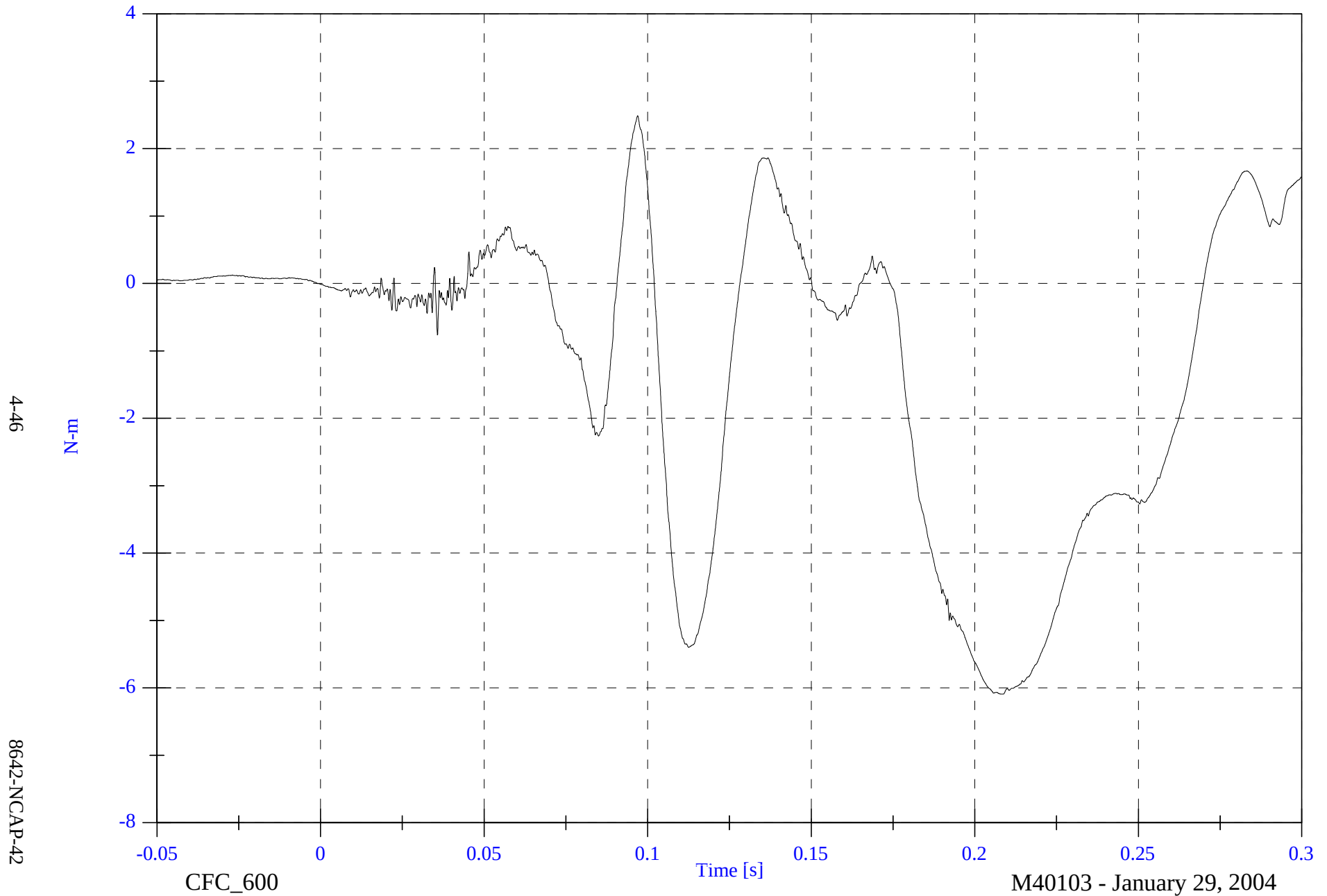


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Upper Neck Mz

Max: 2.5 [N-m] at 0.097 [s]

Min: -6.1 [N-m] at 0.209 [s]

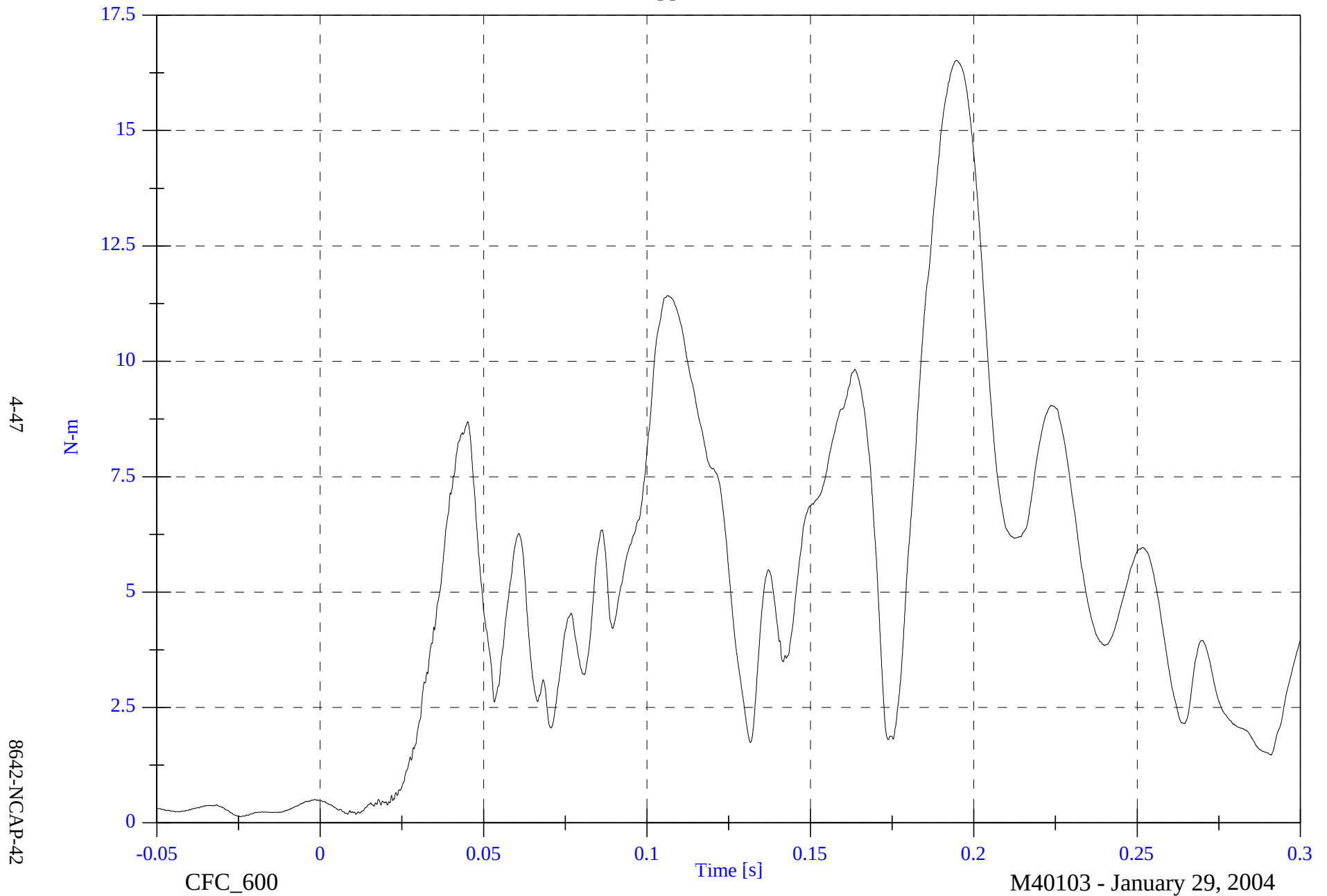


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Upper Neck M Resultant

Max: 16.5 [N-m] at 0.195 [s]

Min: 0.1 [N-m] at -0.024 [s]

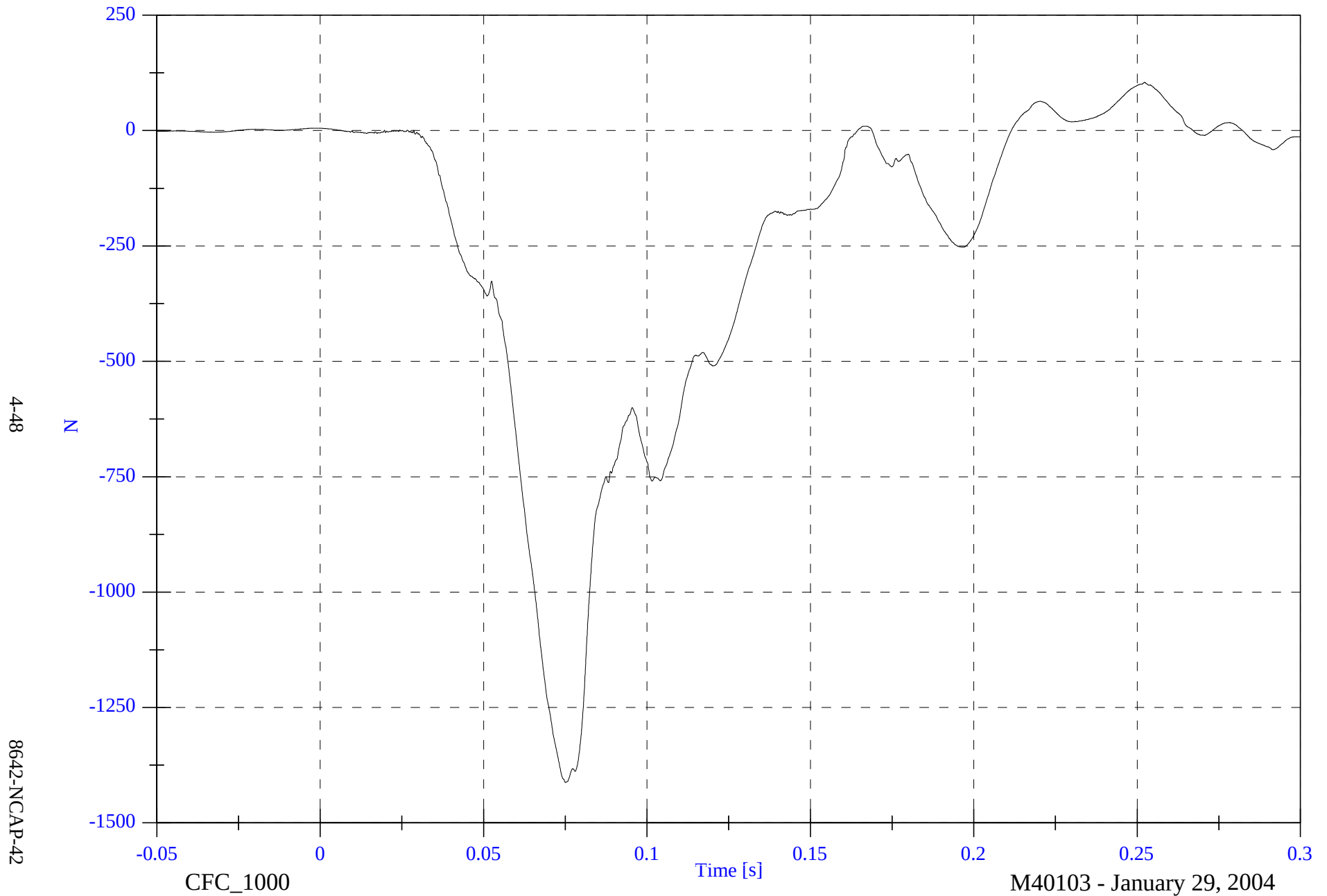


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Lower Neck Fx

Max: 104.2 [N] at 0.252 [s]

Min: -1412.6 [N] at 0.075 [s]

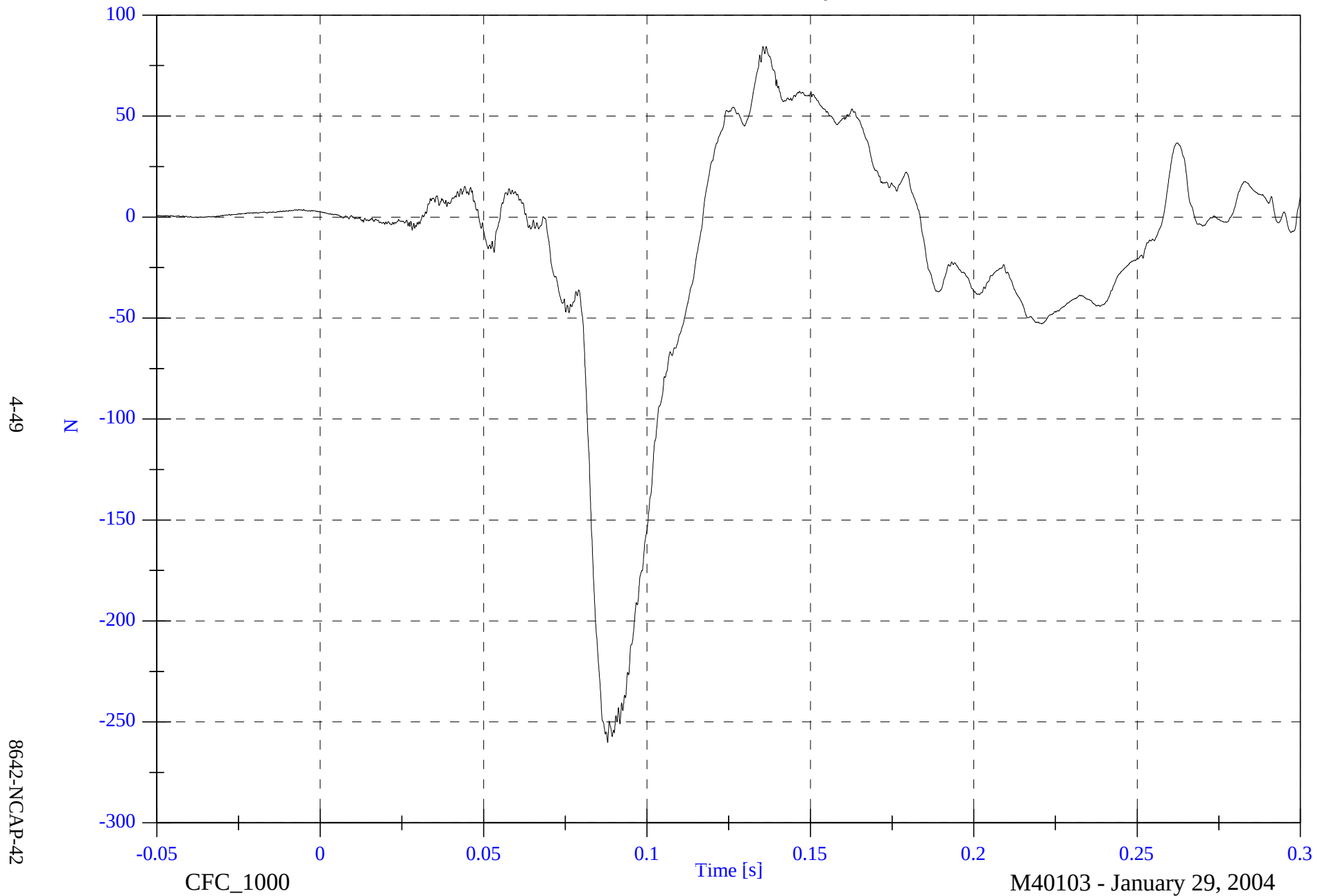


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Lower Neck Fy

Max: 84.5 [N] at 0.136 [s]

Min: -260.2 [N] at 0.088 [s]

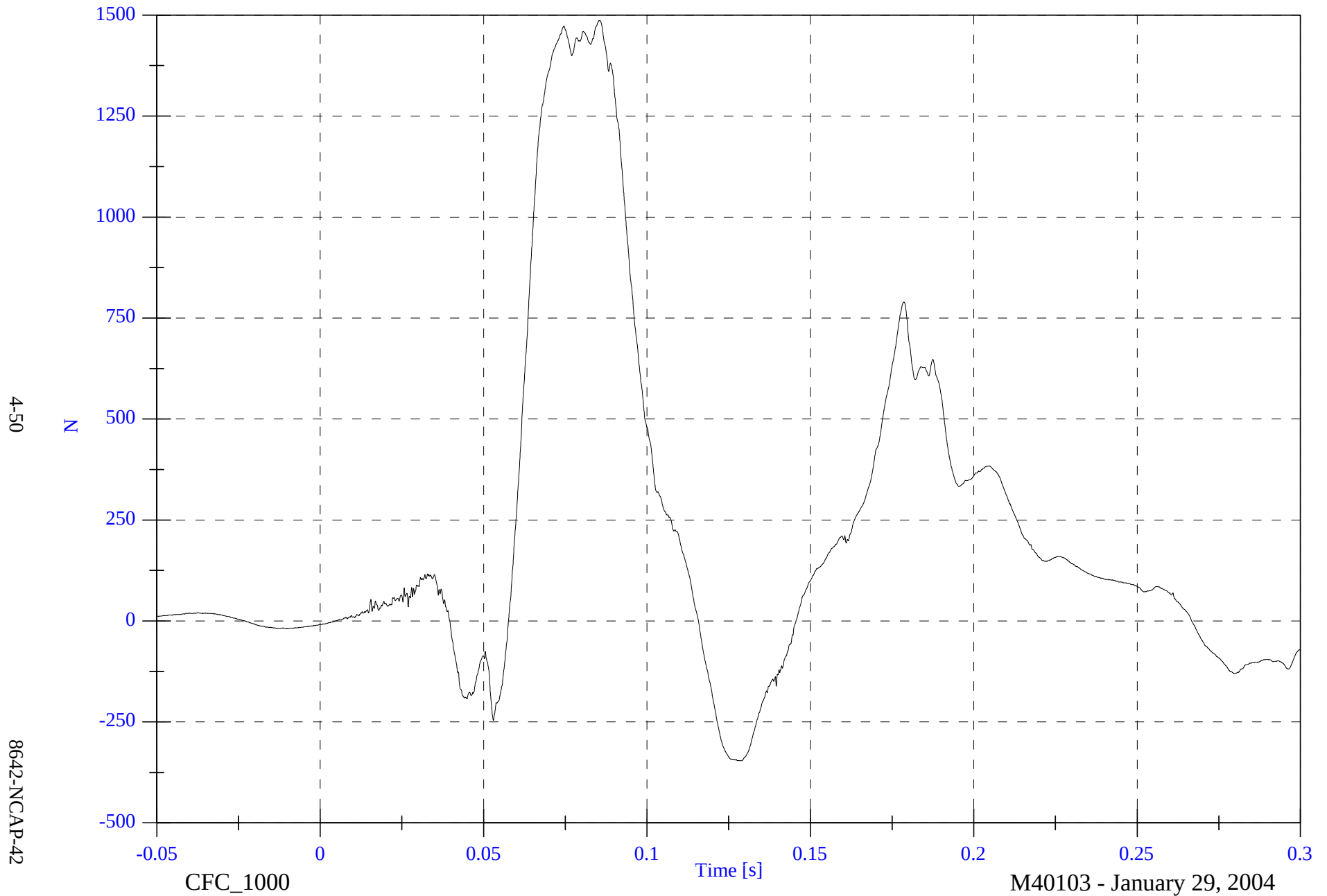


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Lower Neck Fz

Max: 1487.2 [N] at 0.085 [s]

Min: -346.2 [N] at 0.129 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

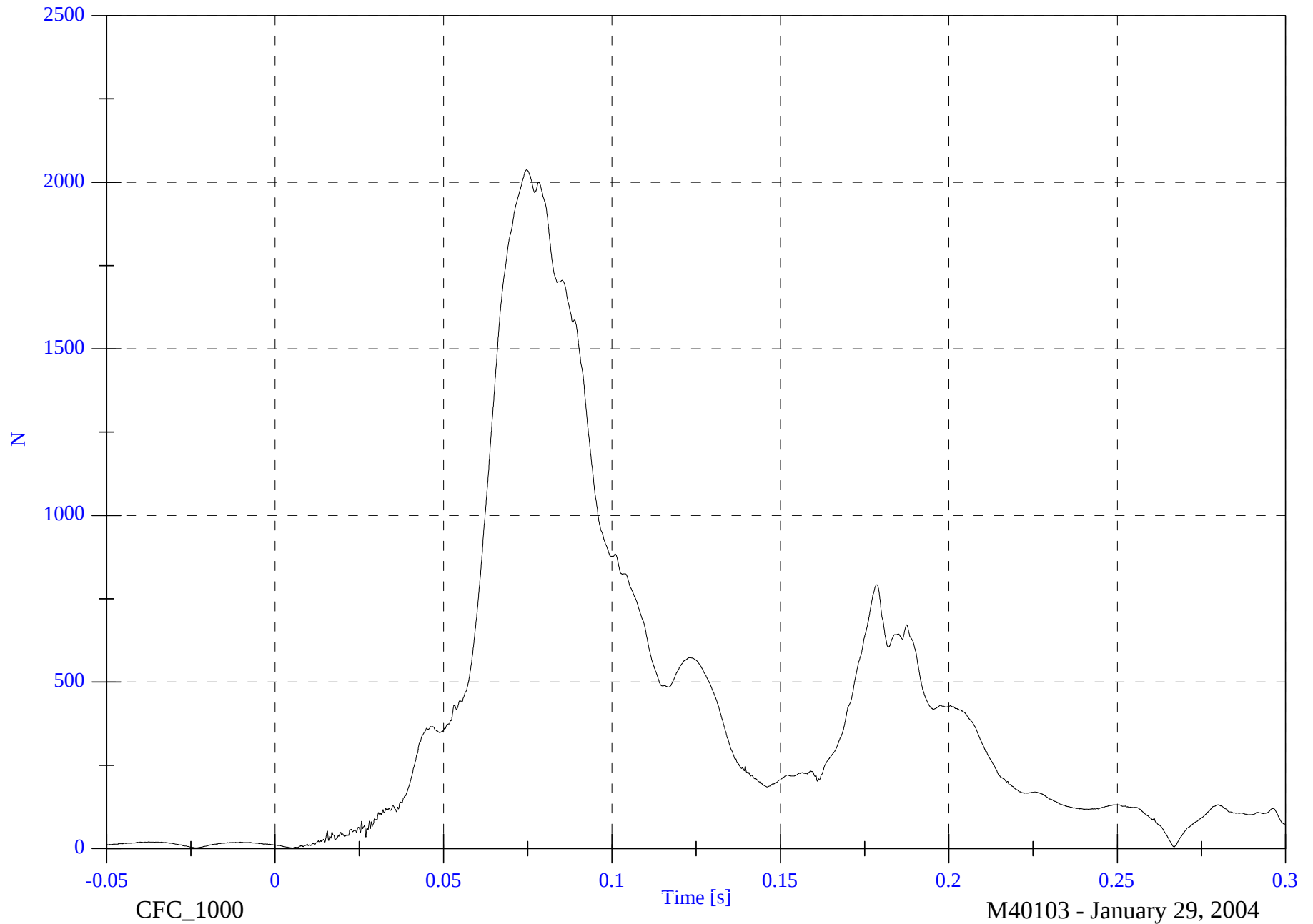
V1P4 Lower Neck F Resultant

Max: 2037.6 [N] at 0.075 [s]

Min: 1.9 [N] at 0.005 [s]

4-51

8642-NCAP-42

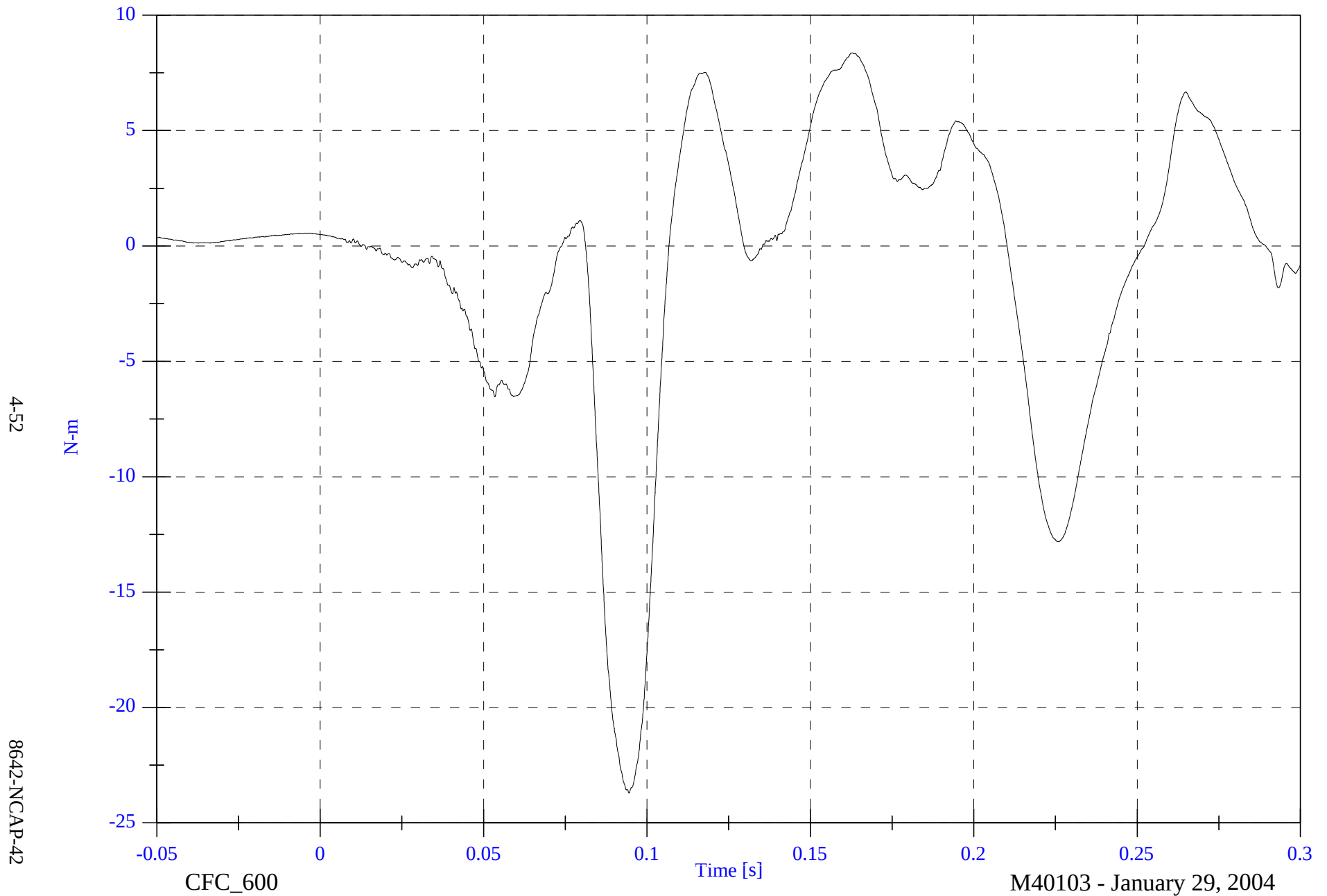


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Lower Neck Mx

Max: 8.4 [N-m] at 0.163 [s]

Min: -23.7 [N-m] at 0.095 [s]

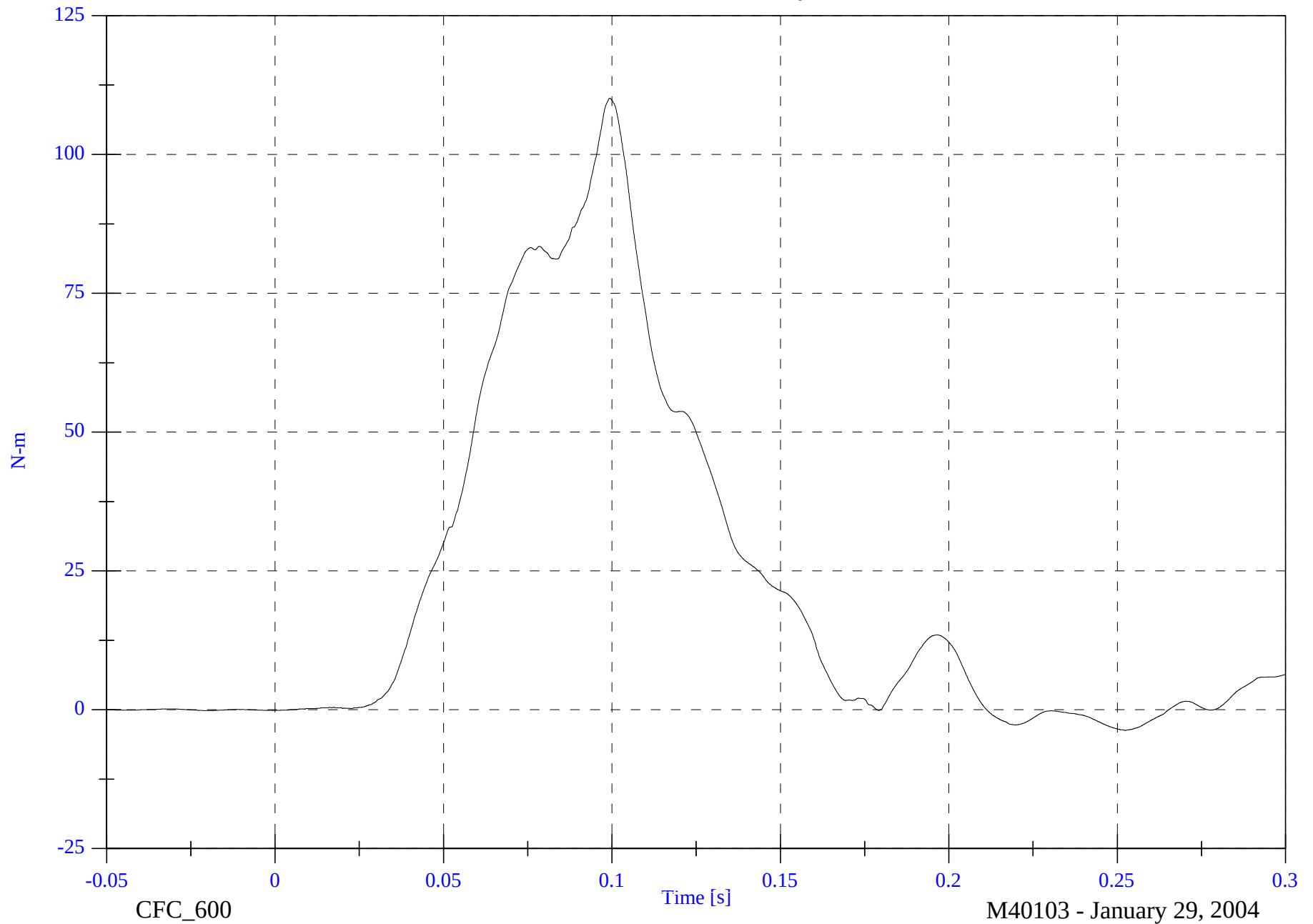


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Lower Neck My

Max: 110.1 [N-m] at 0.099 [s]

Min: -3.7 [N-m] at 0.252 [s]



4-53

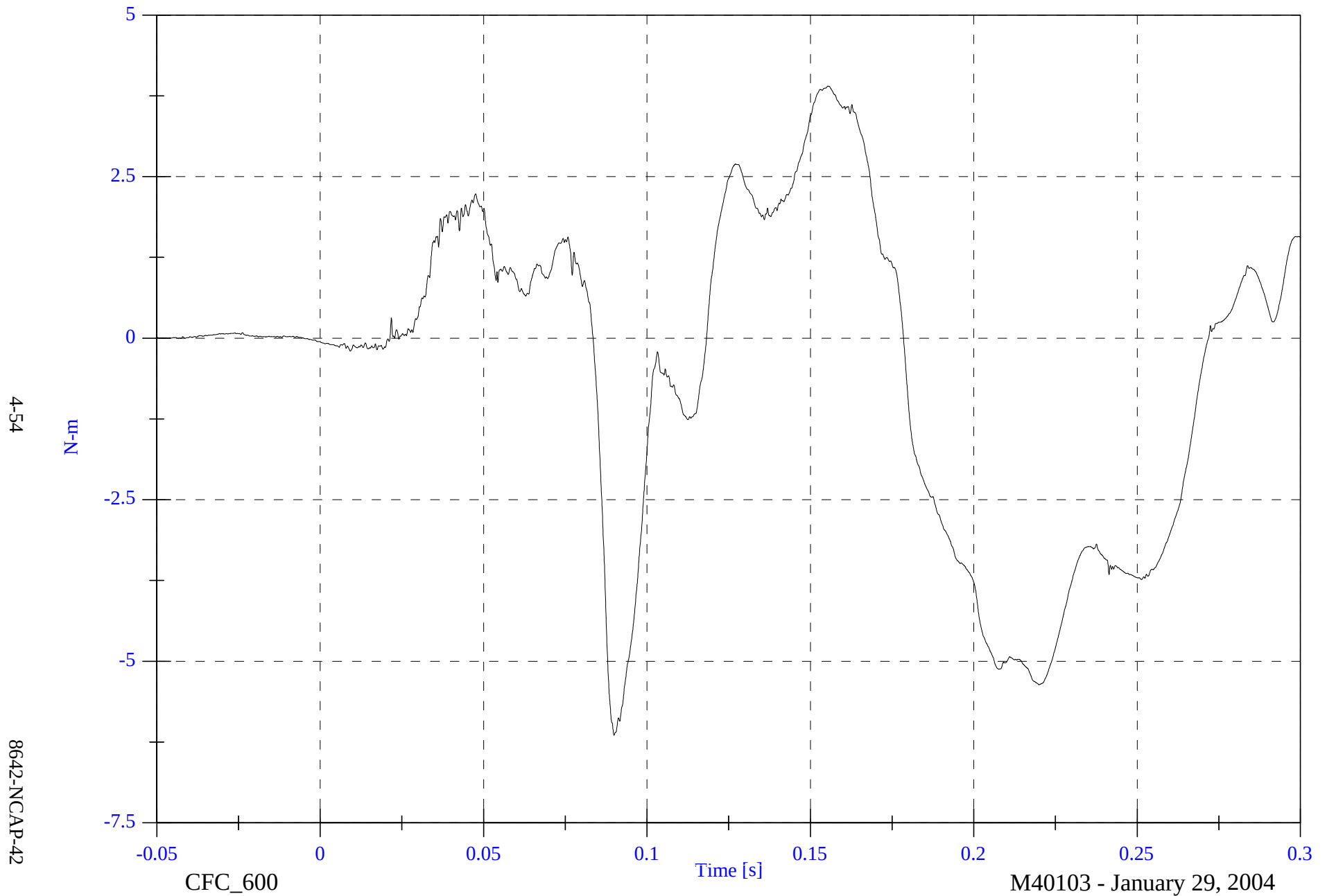
8642-NCAP-42

2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Lower Neck Mz

Max: 3.9 [N-m] at 0.155 [s]

Min: -6.1 [N-m] at 0.090 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

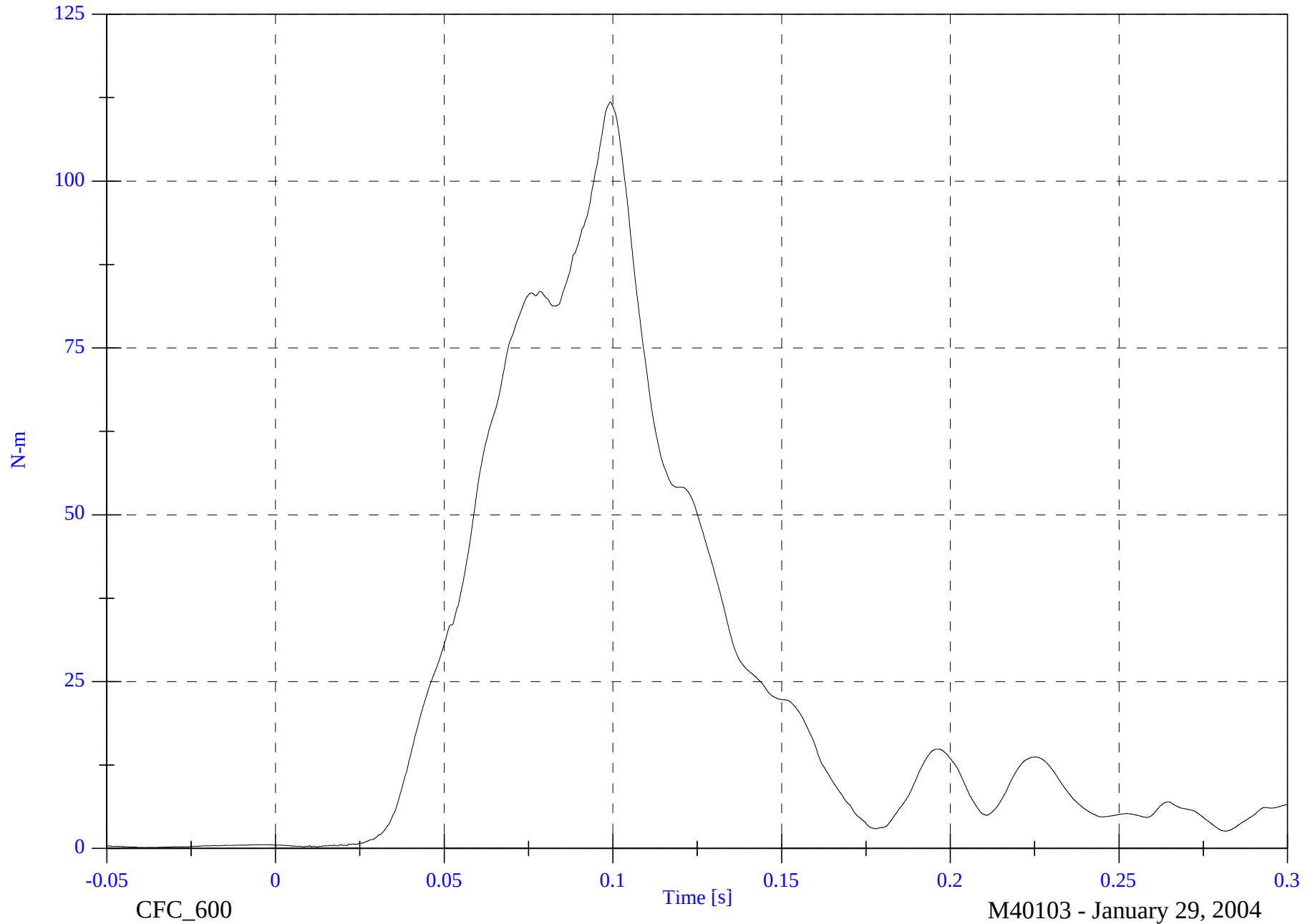
V1P4 Lower Neck M Resultant

Max: 111.8 [N-m] at 0.099 [s]

Min: 0.1 [N-m] at -0.039 [s]

4-55

8642-NCAP-42

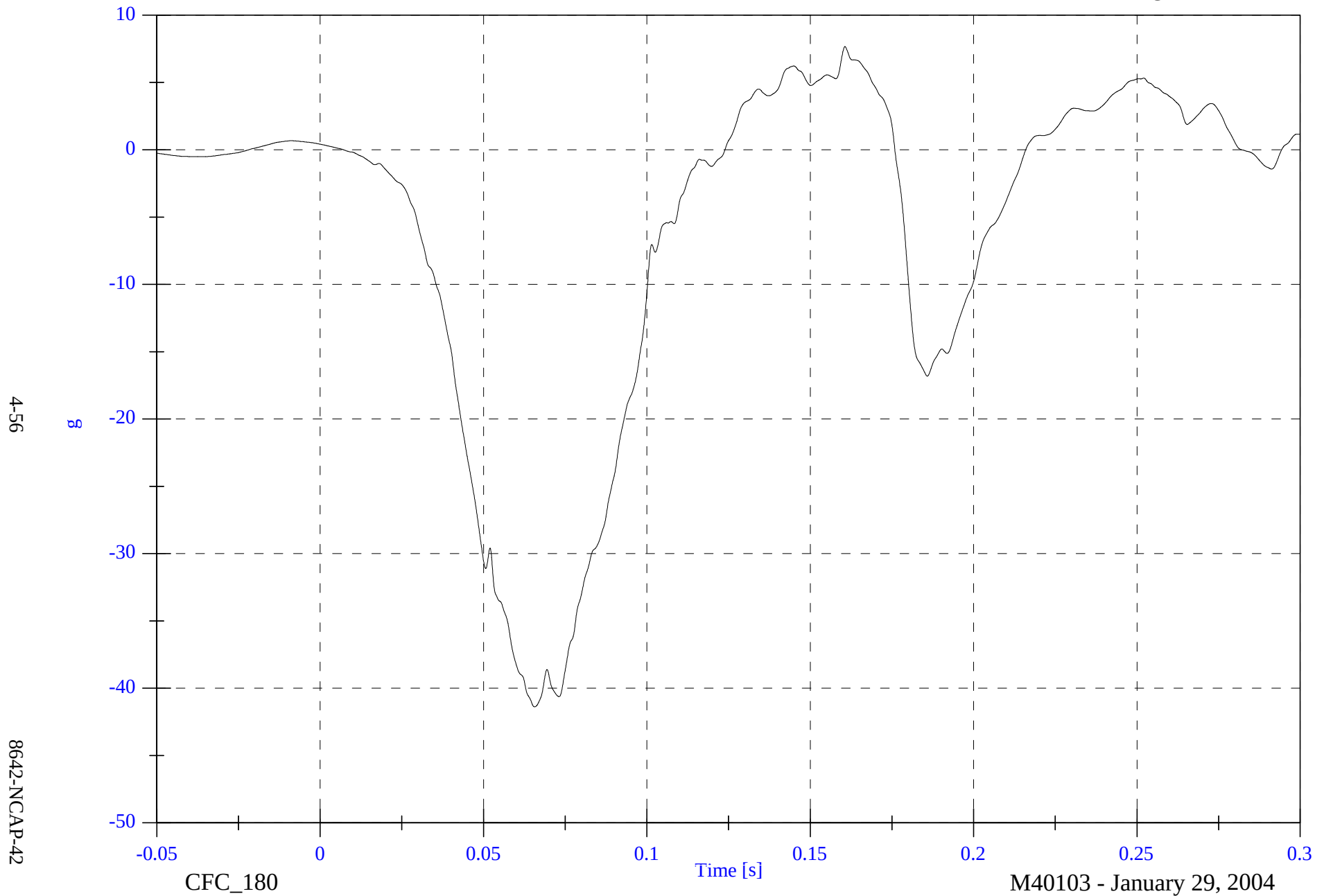


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Chest x

Max: 7.7 [g] at 0.161 [s]

Min: -41.4 [g] at 0.066 [s]

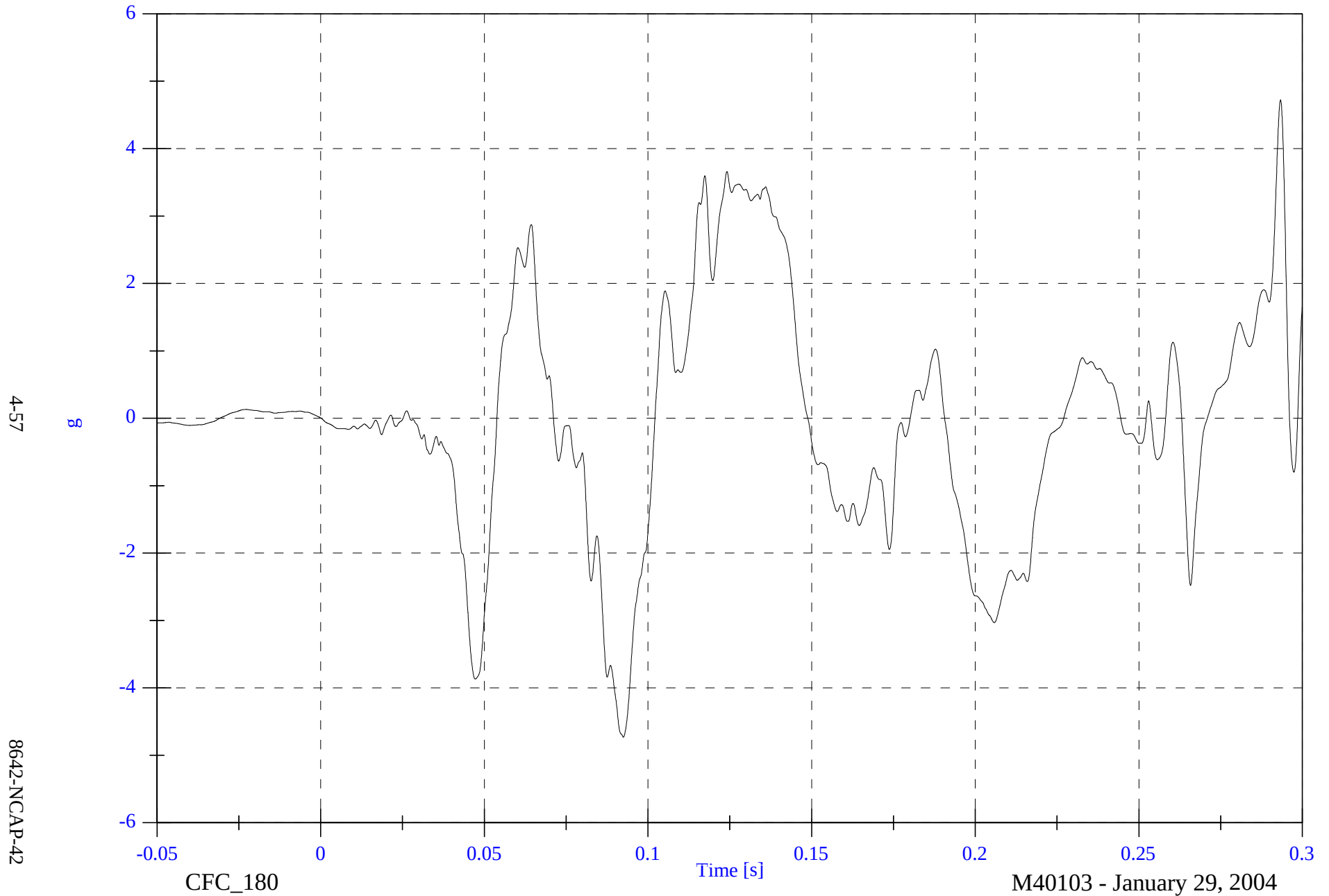


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Chest y

Max: 4.7 [g] at 0.293 [s]

Min: -4.7 [g] at 0.093 [s]

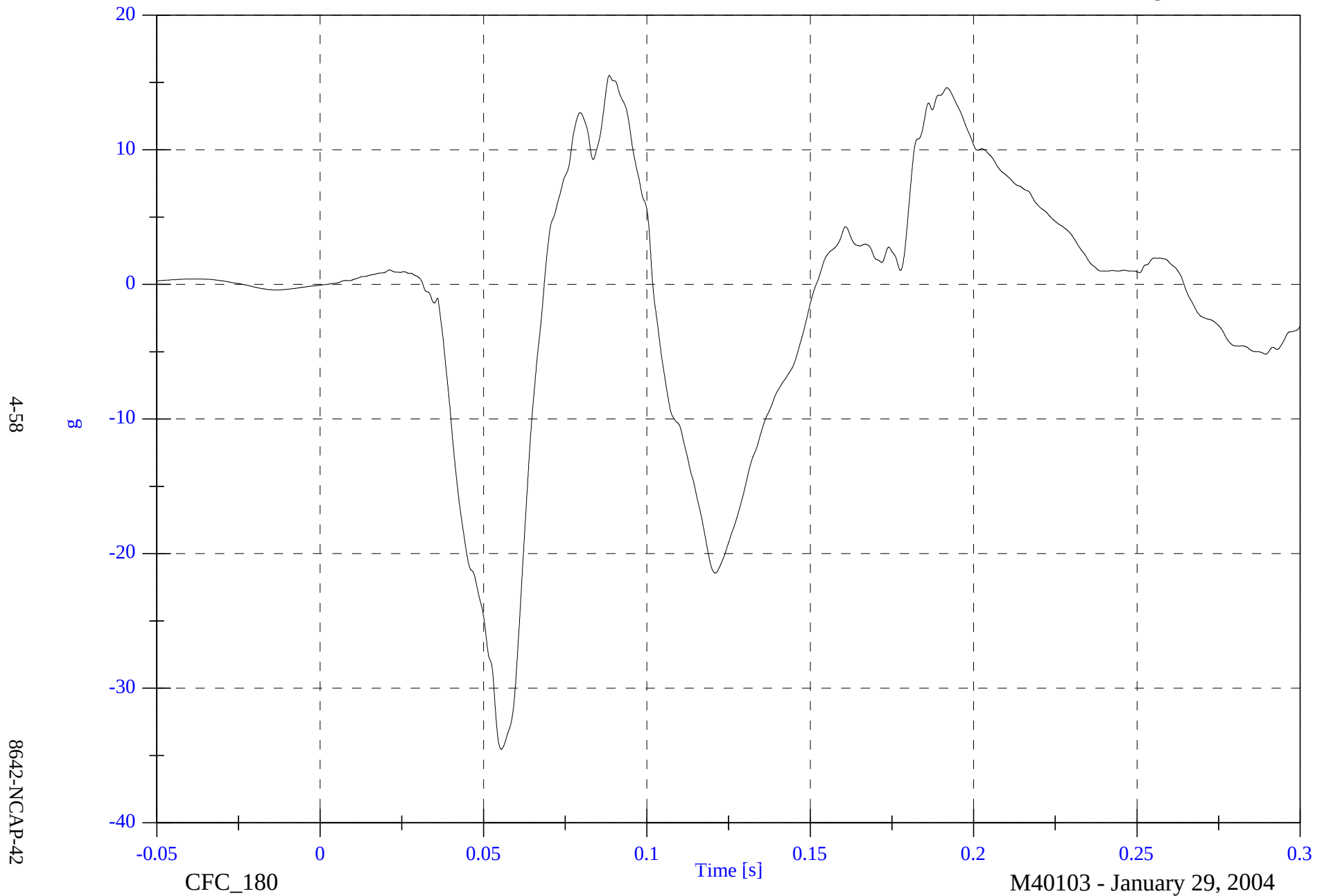


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Chest z

Max: 15.5 [g] at 0.088 [s]

Min: -34.5 [g] at 0.055 [s]

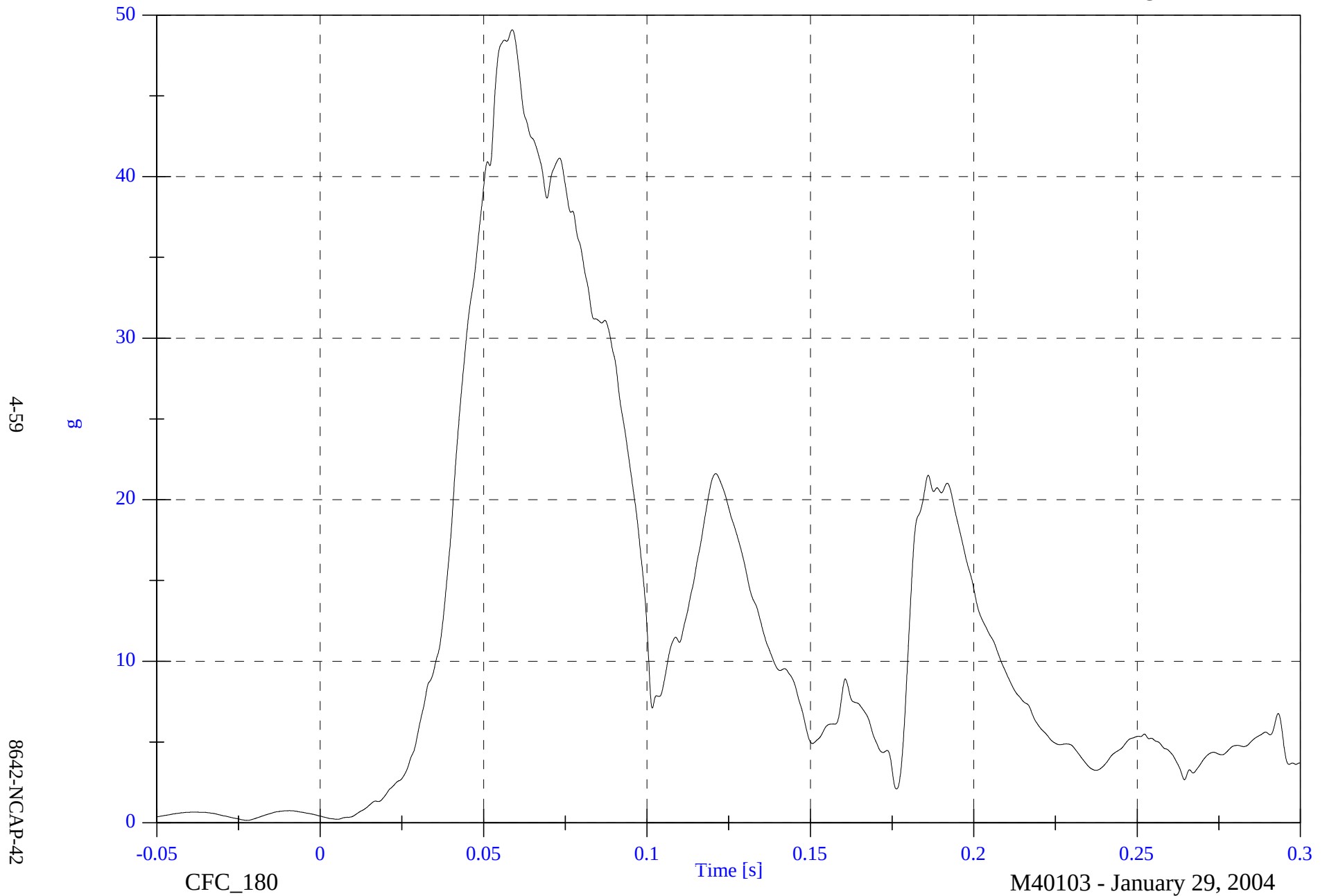


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Chest Resultant

Max: 49.1 [g] at 0.059 [s]

Min: 0.1 [g] at -0.022 [s]

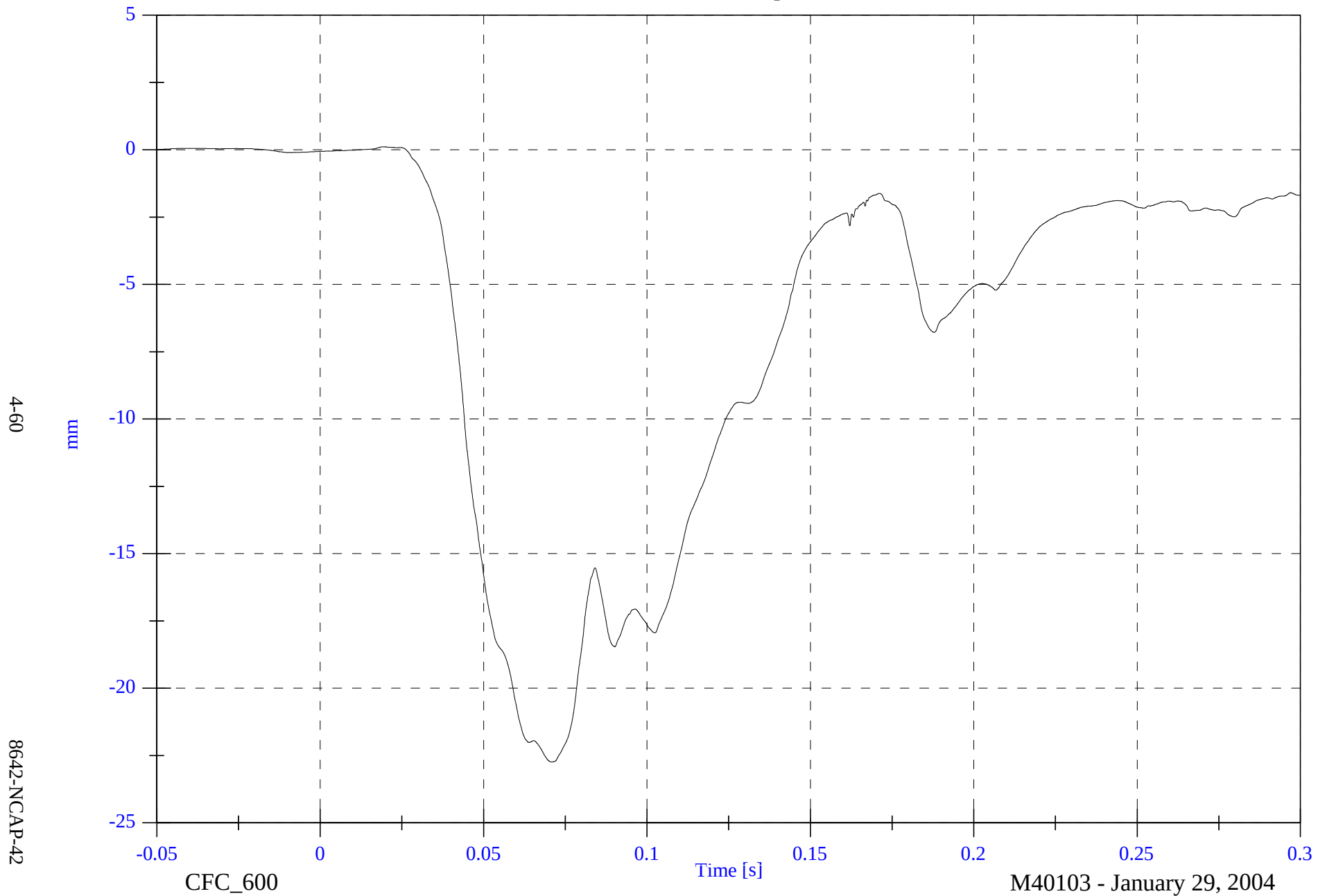


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Chest Compression

Max: 0.1 [mm] at 0.019 [s]

Min: -22.7 [mm] at 0.071 [s]

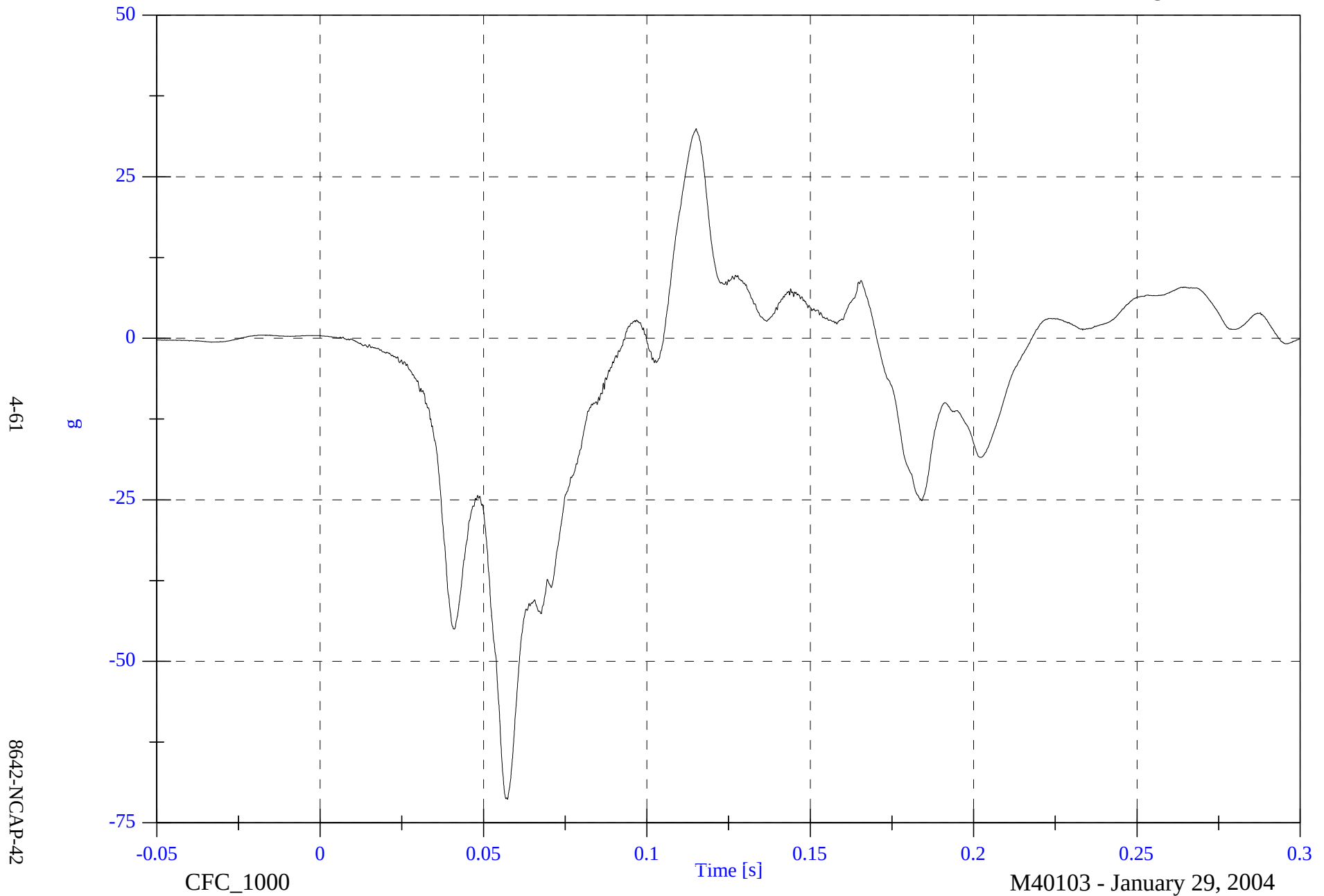


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Pelvic x

Max: 32.4 [g] at 0.115 [s]

Min: -71.3 [g] at 0.057 [s]

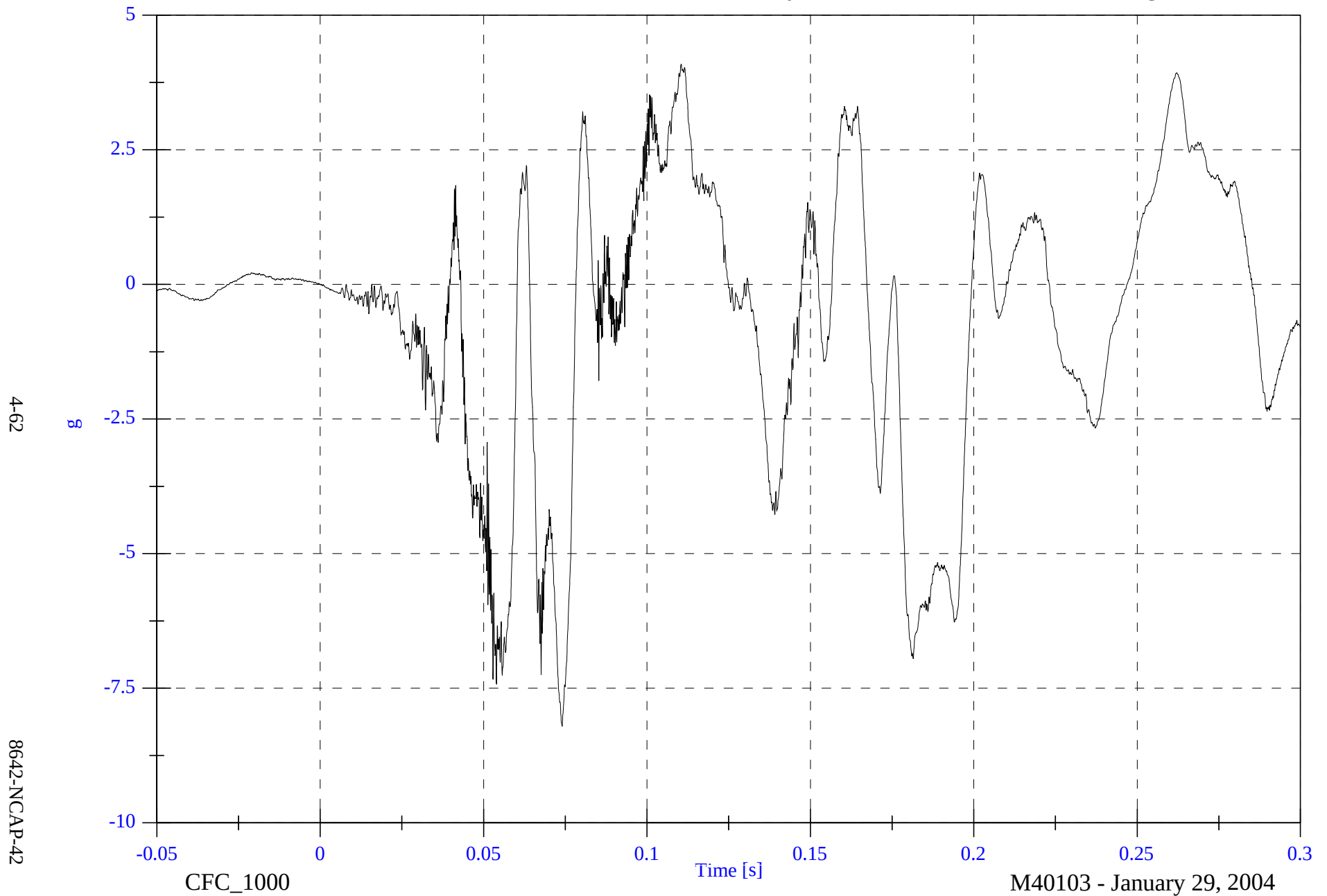


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Pelvic y

Max: 4.1 [g] at 0.110 [s]

Min: -8.2 [g] at 0.074 [s]

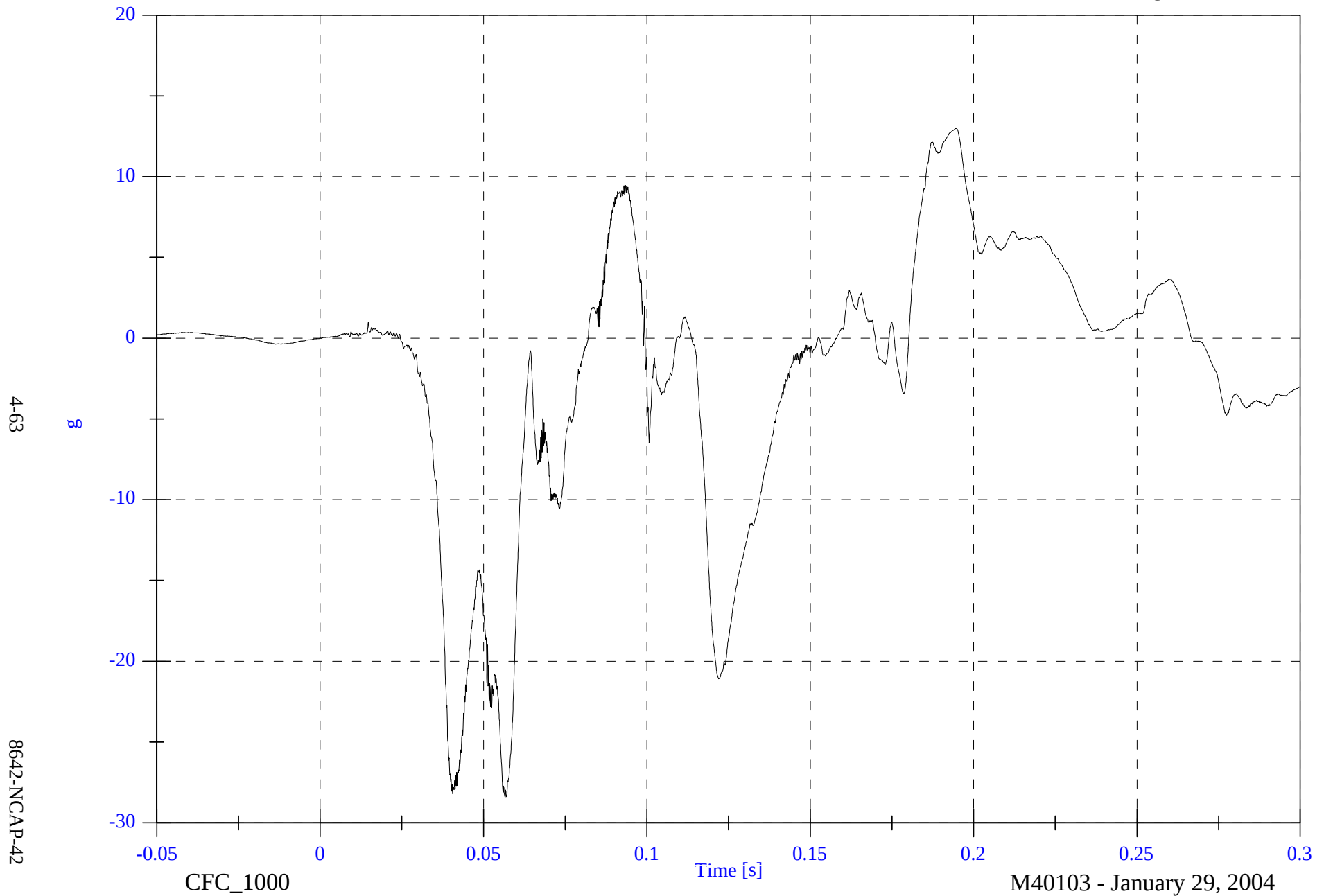


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Pelvic z

Max: 13.0 [g] at 0.195 [s]

Min: -28.4 [g] at 0.057 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

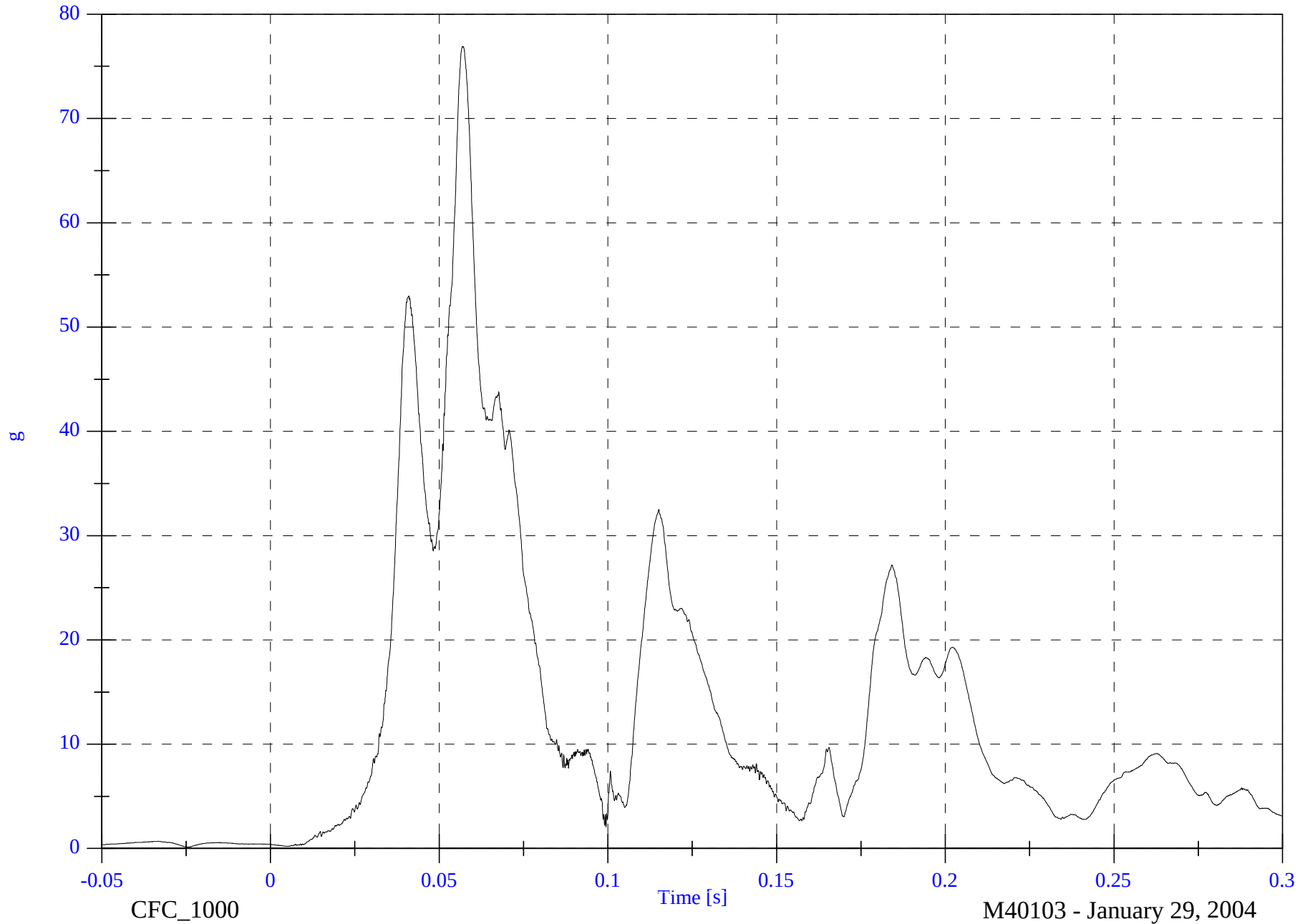
V1P4 Pelvic Resultant

Max: 76.9 [g] at 0.057 [s]

Min: 0.1 [g] at -0.025 [s]

4-64

8642-NCAP-42

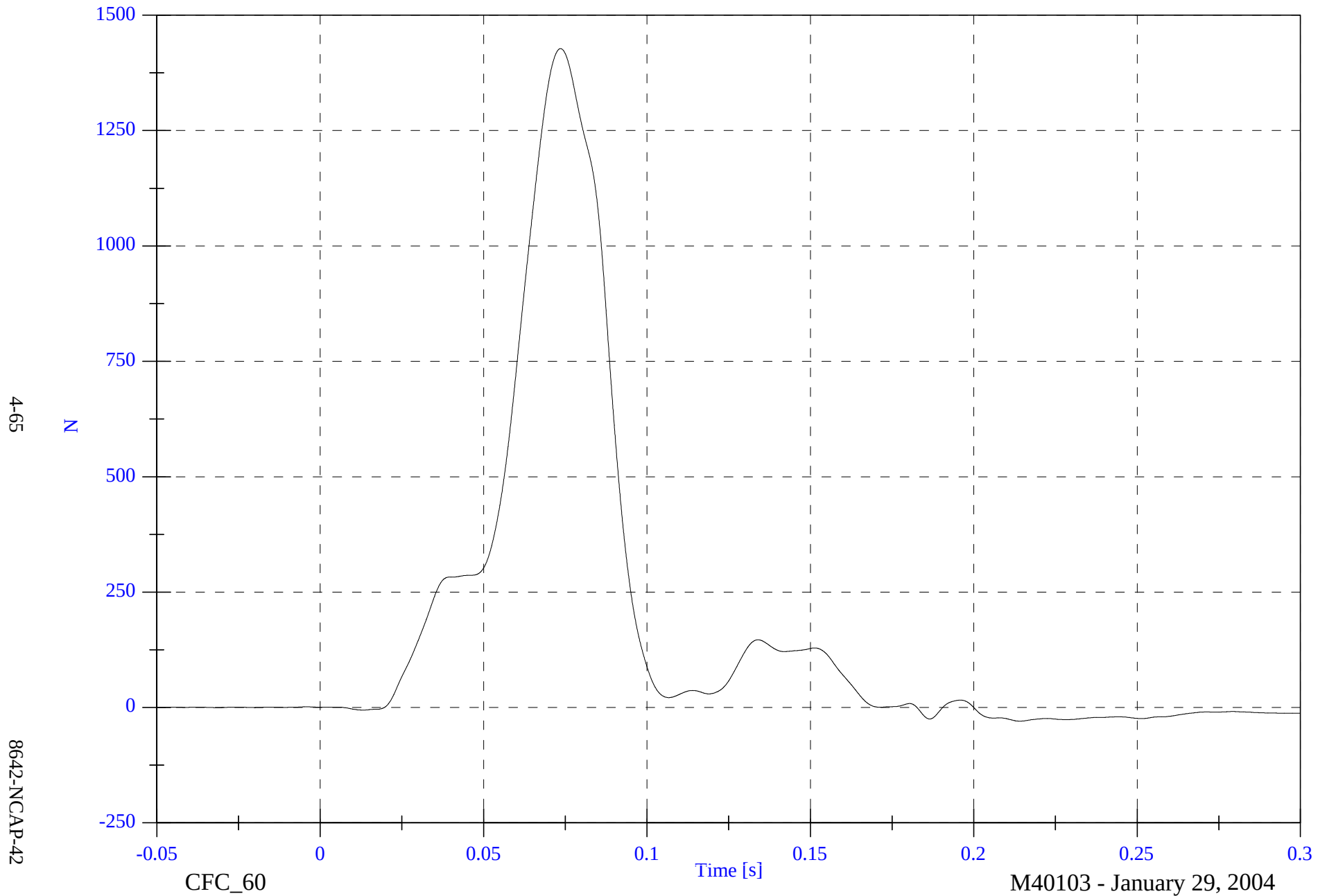


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Tether Belt

Max: 1427.5 [N] at 0.074 [s]

Min: -29.7 [N] at 0.214 [s]

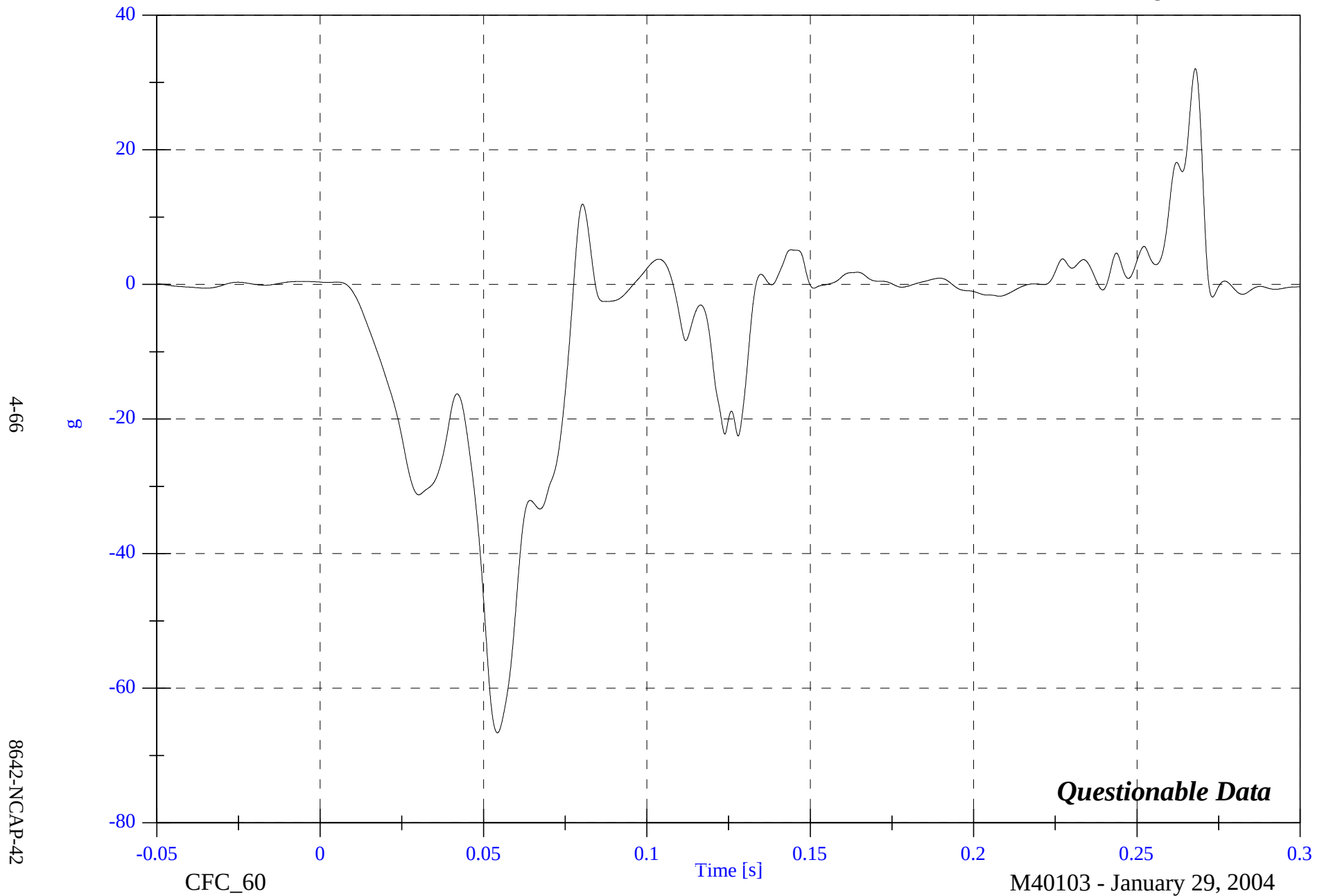


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Seat x

Max: 32.1 [g] at 0.268 [s]

Min: -66.6 [g] at 0.054 [s]

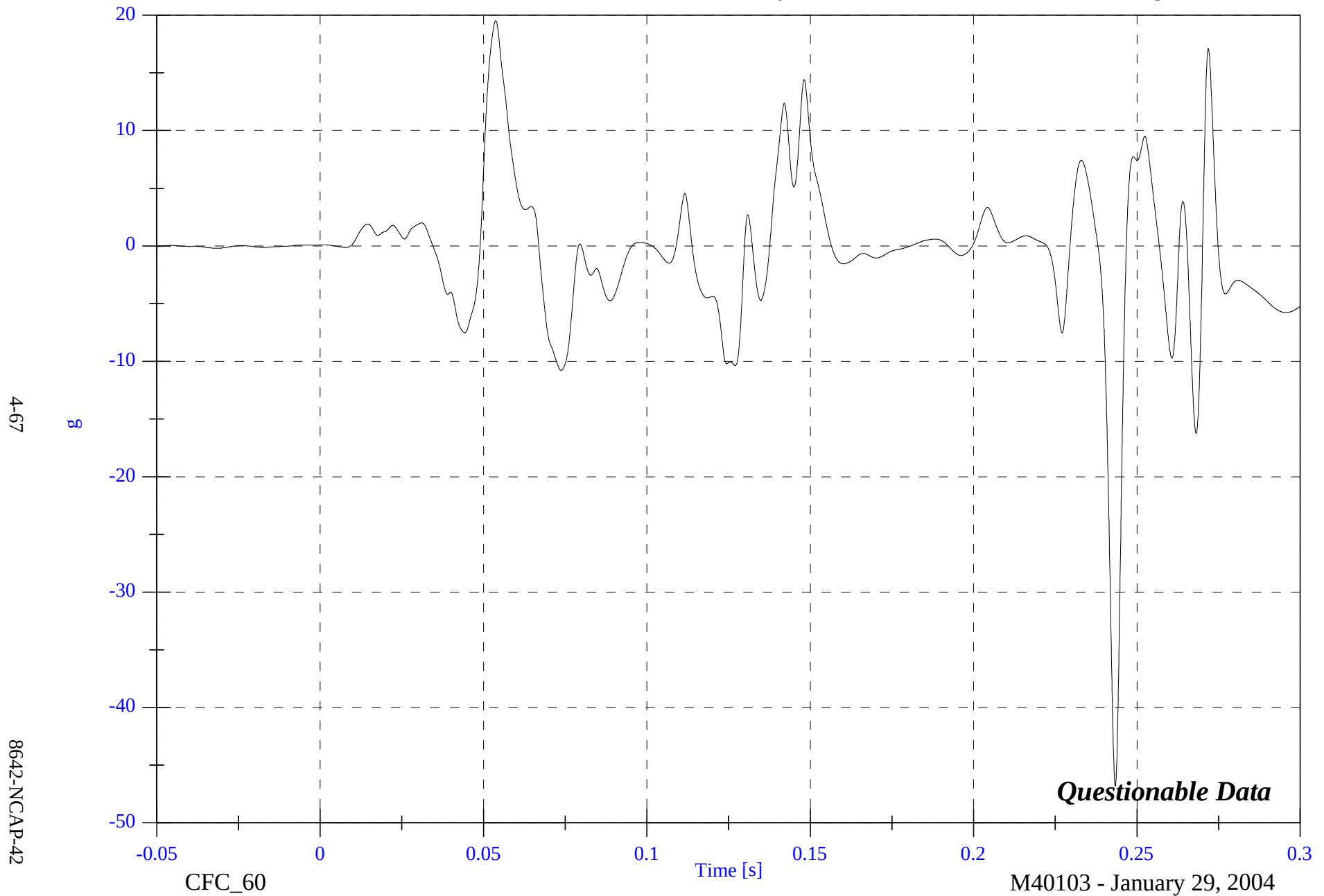


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Seat y

Max: 19.5 [g] at 0.054 [s]

Min: -46.8 [g] at 0.243 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Seat z

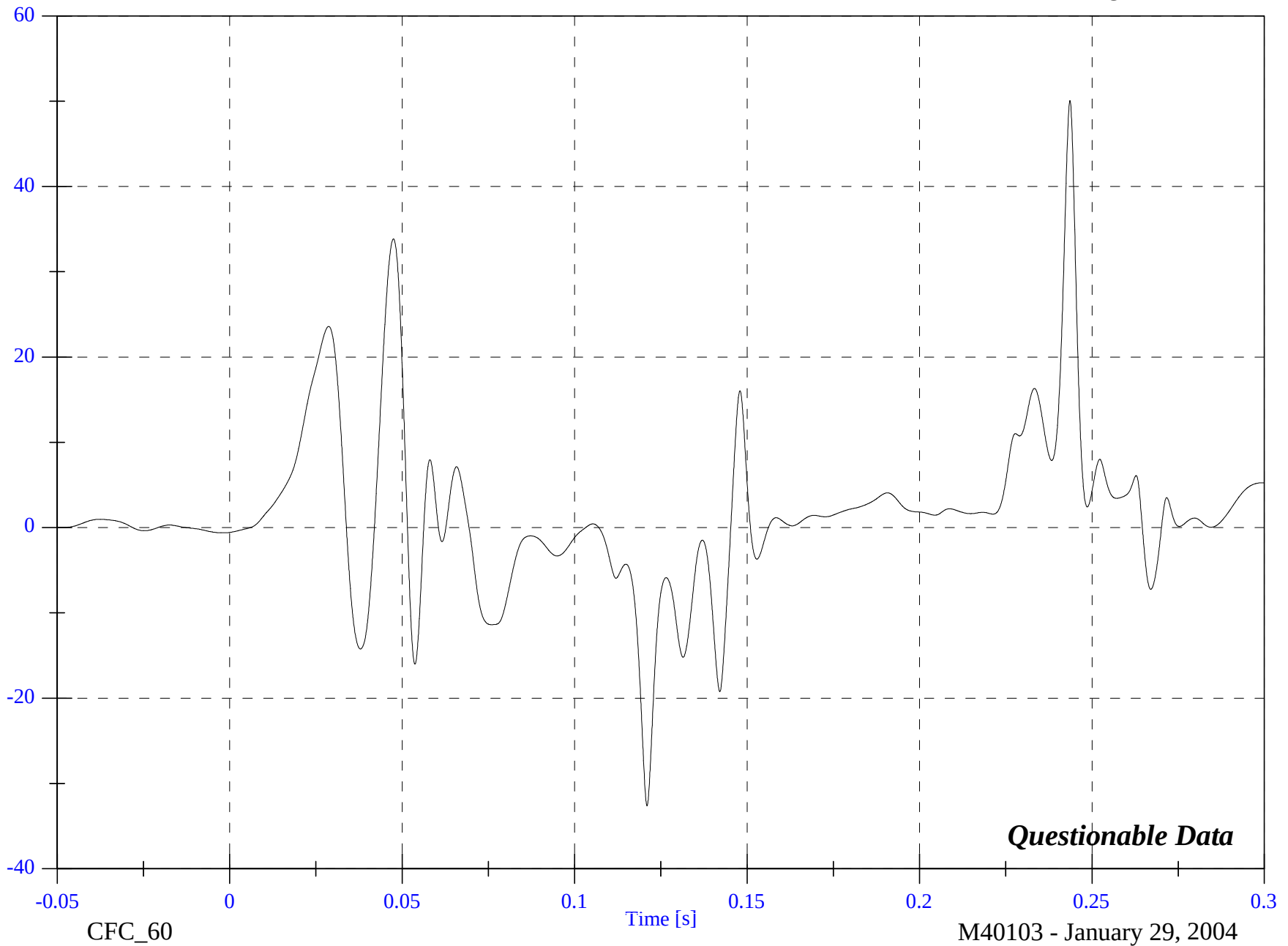
Max: 50.1 [g] at 0.244 [s]

Min: -32.6 [g] at 0.121 [s]

4-68

8642-NCAP-42

g



2004 NCAP Test 6 2004 Chevrolet Colorado

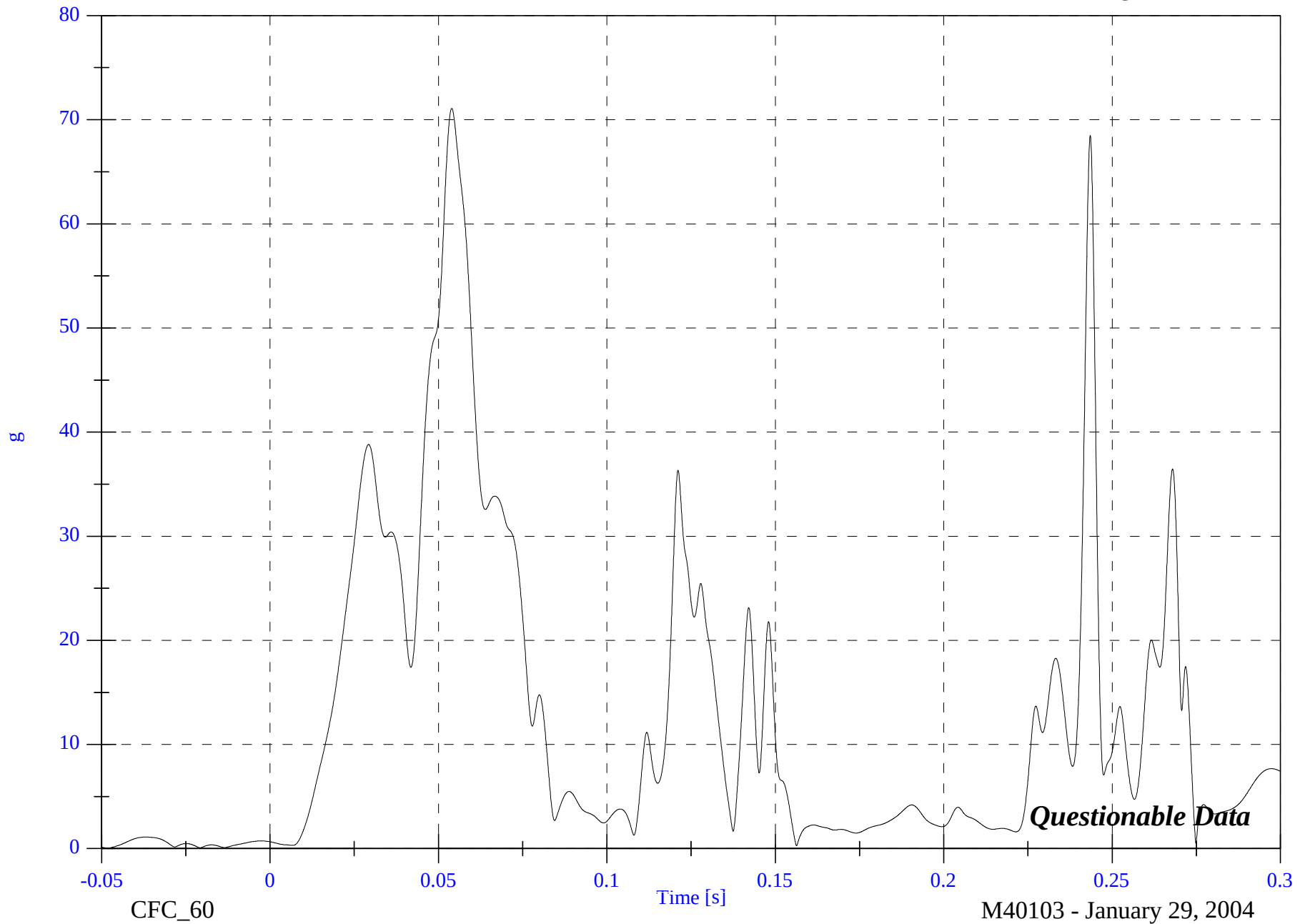
V1P3 Seat Resultant

Max: 71.1 [g] at 0.054 [s]

Min: 0.0 [g] at -0.048 [s]

4-69

8642-NCAP-42



2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Seat x Velocity

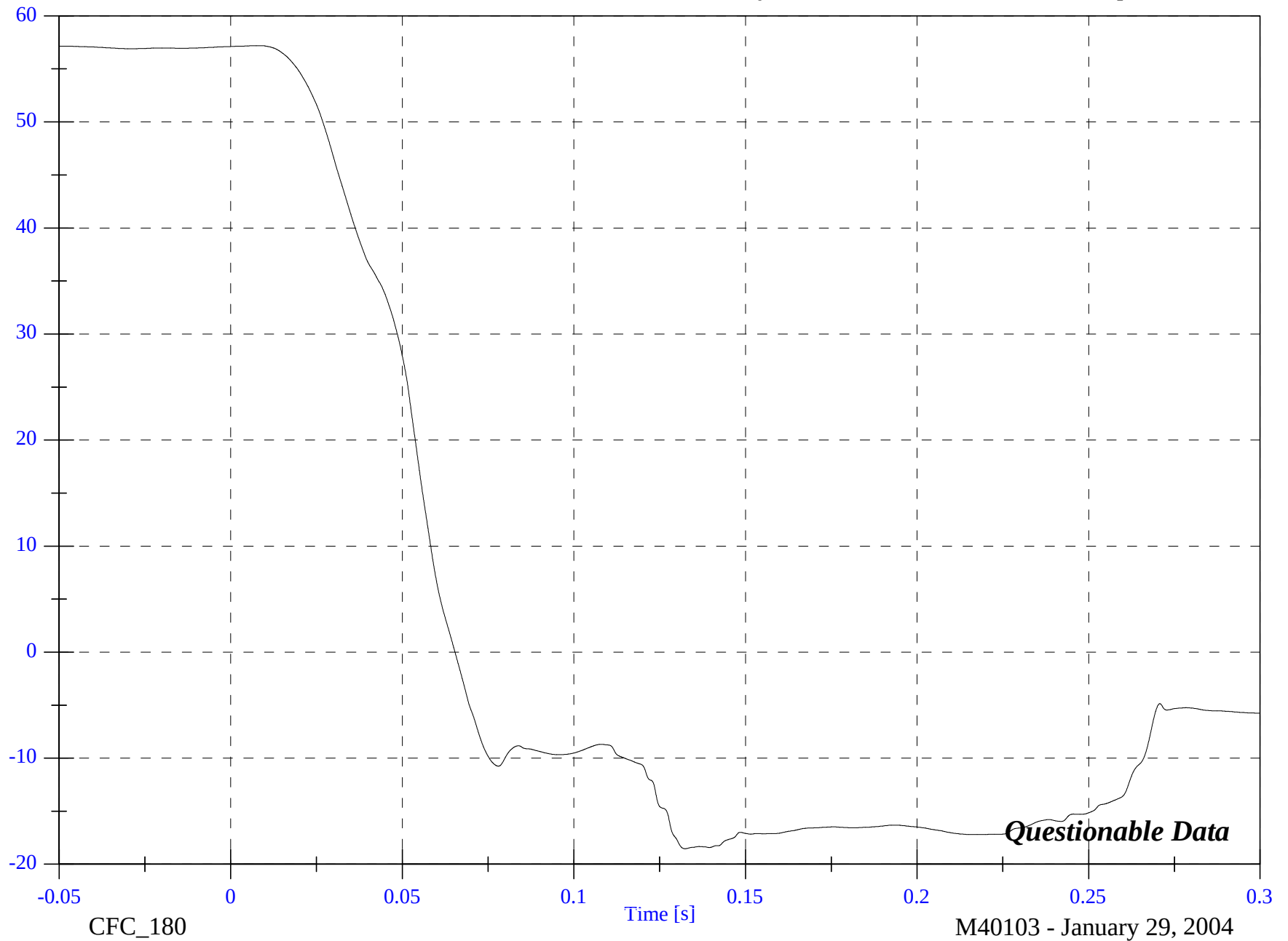
Max: 57.2 [kph] at 0.008 [s]

Min: -18.5 [kph] at 0.132 [s]

4-70

kph

8642-NCAP-42

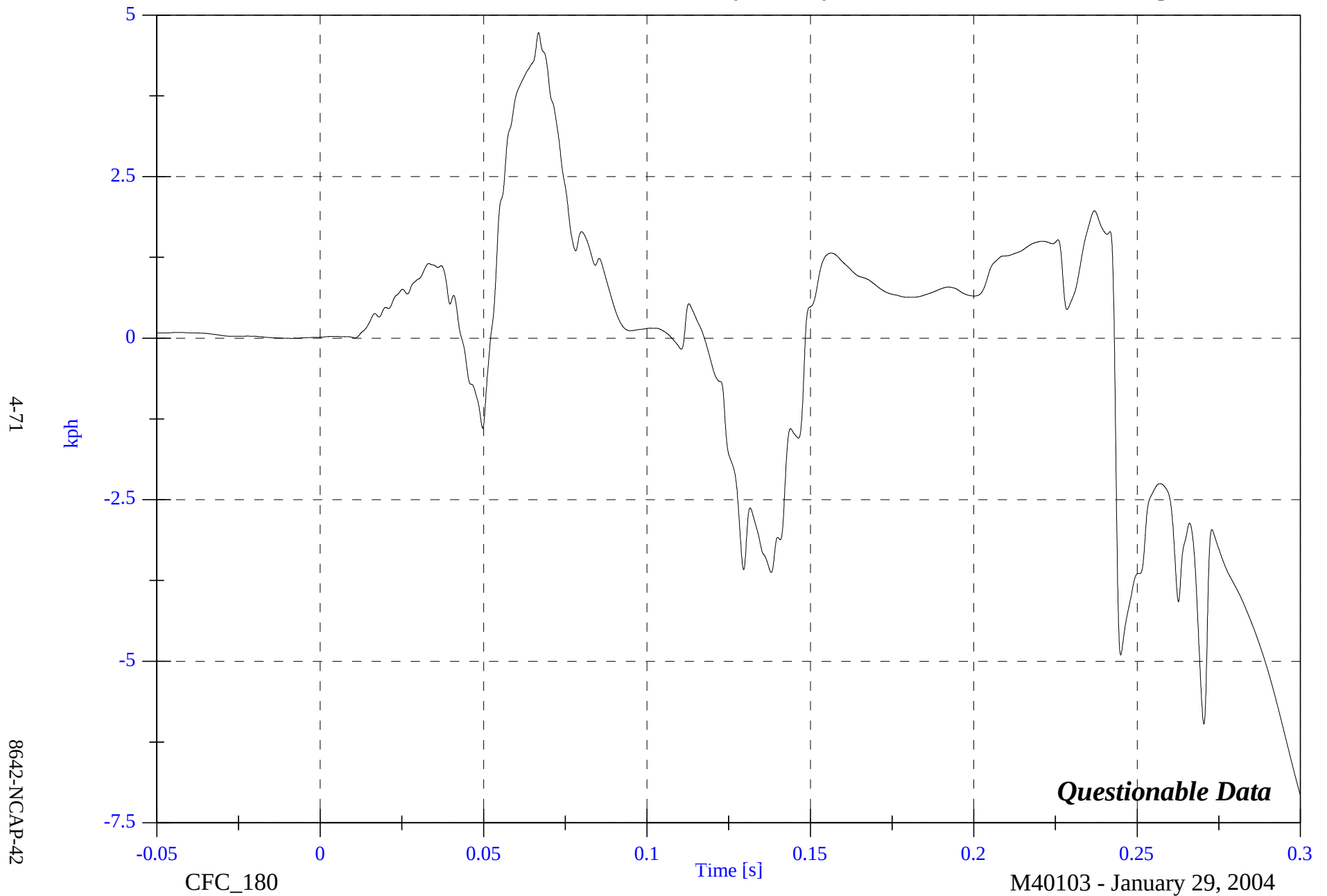


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Seat y Velocity

Max: 4.7 [kph] at 0.067 [s]

Min: -7.1 [kph] at 0.300 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

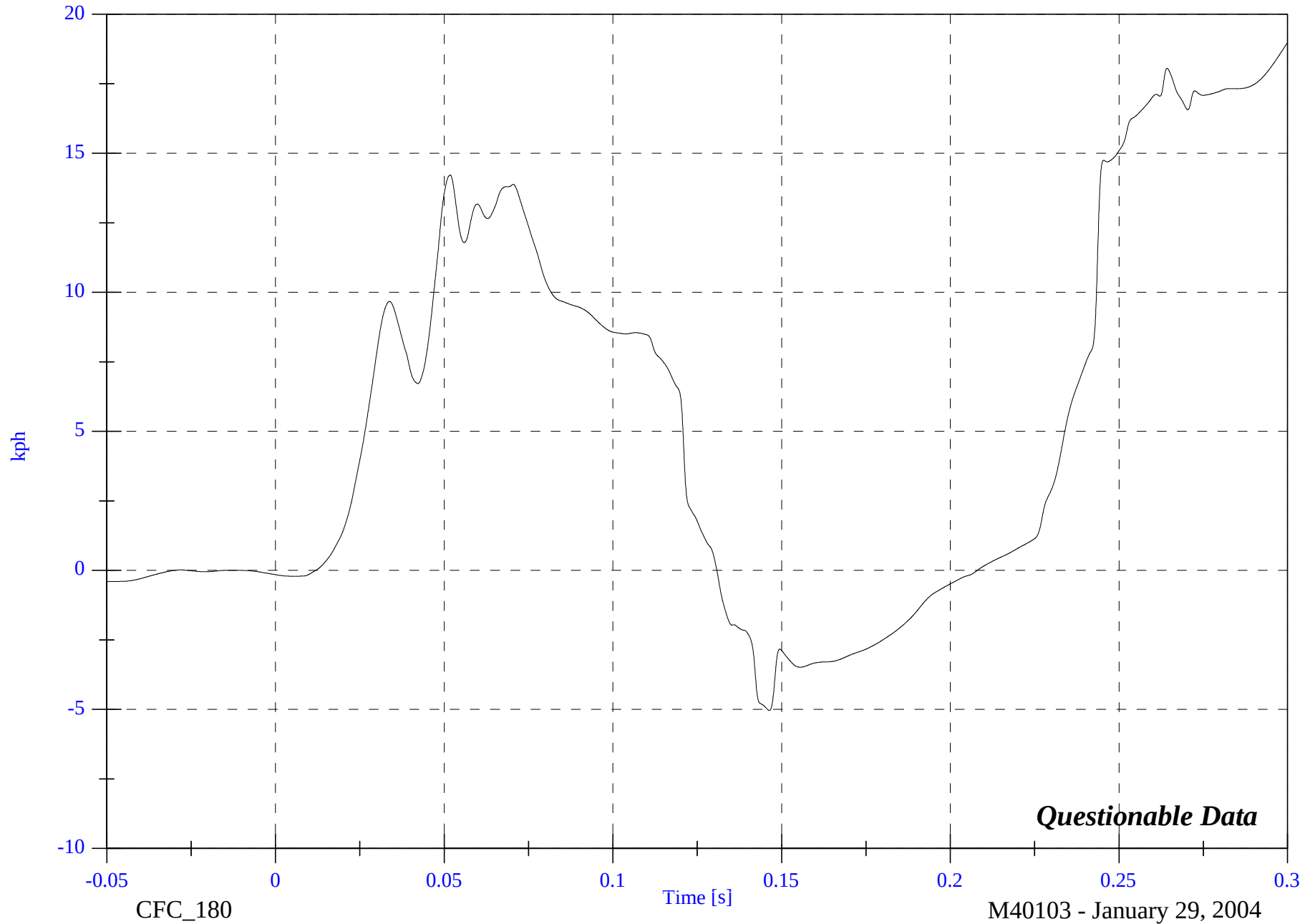
V1P3 Seat z Velocity

Max: 19.0 [kph] at 0.300 [s]

Min: -5.0 [kph] at 0.146 [s]

4-72

8642-NCAP-42

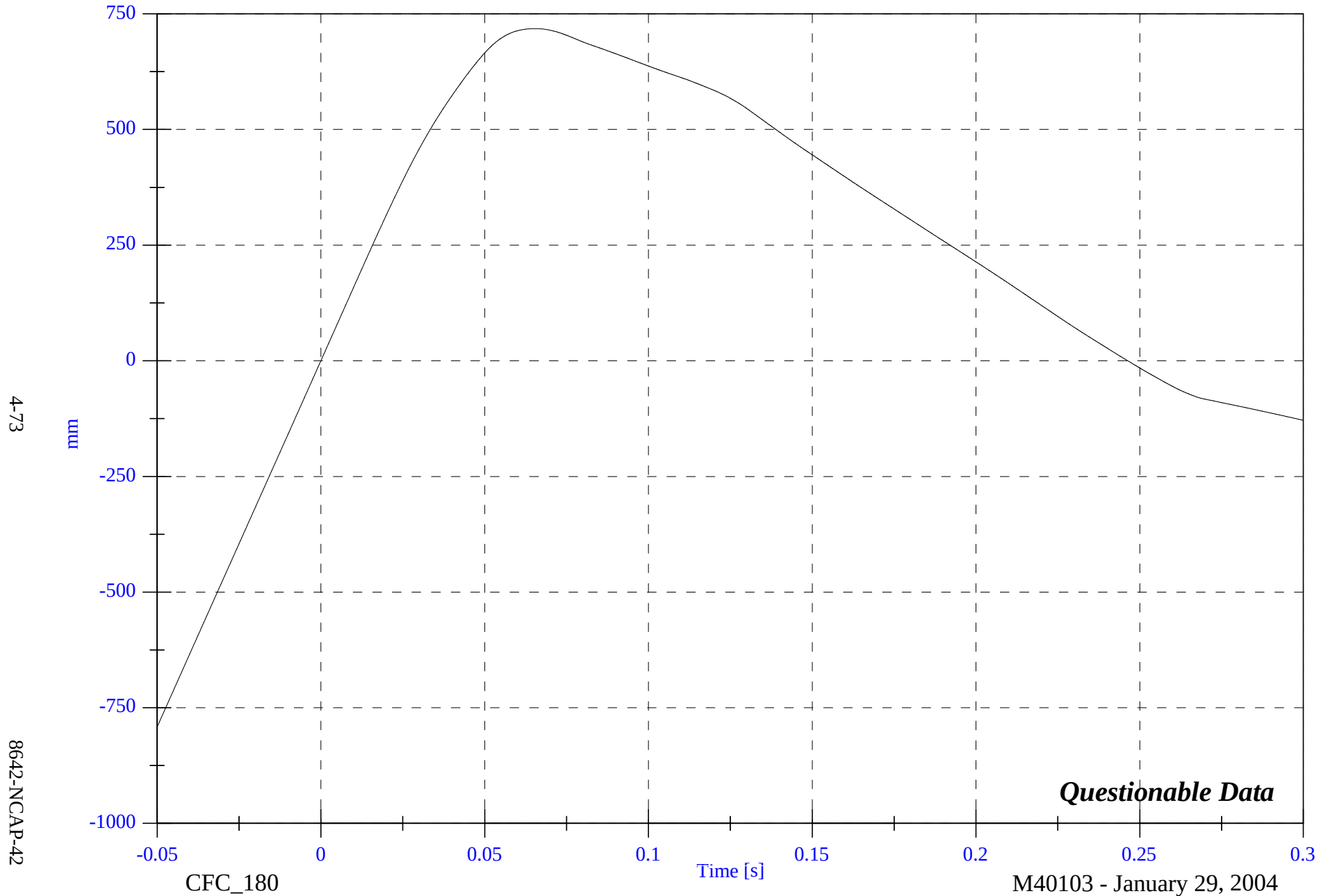


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Seat x Displacement

Max: 718.0 [mm] at 0.065 [s]

Min: -791.7 [mm] at -0.050 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

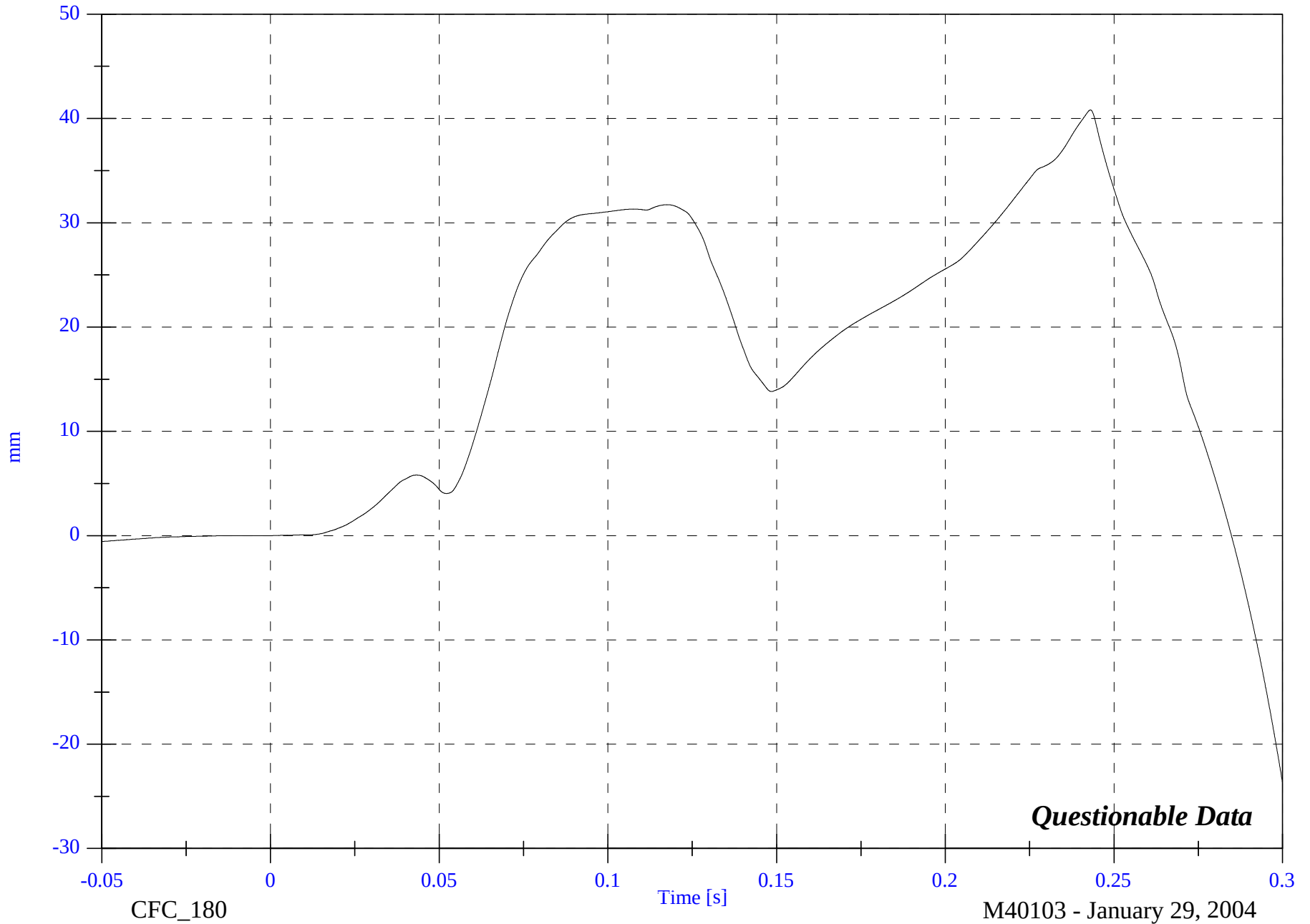
V1P3 Seat y Displacement

Max: 40.8 [mm] at 0.243 [s]

Min: -23.7 [mm] at 0.300 [s]

4-74

8642-NCAP-42

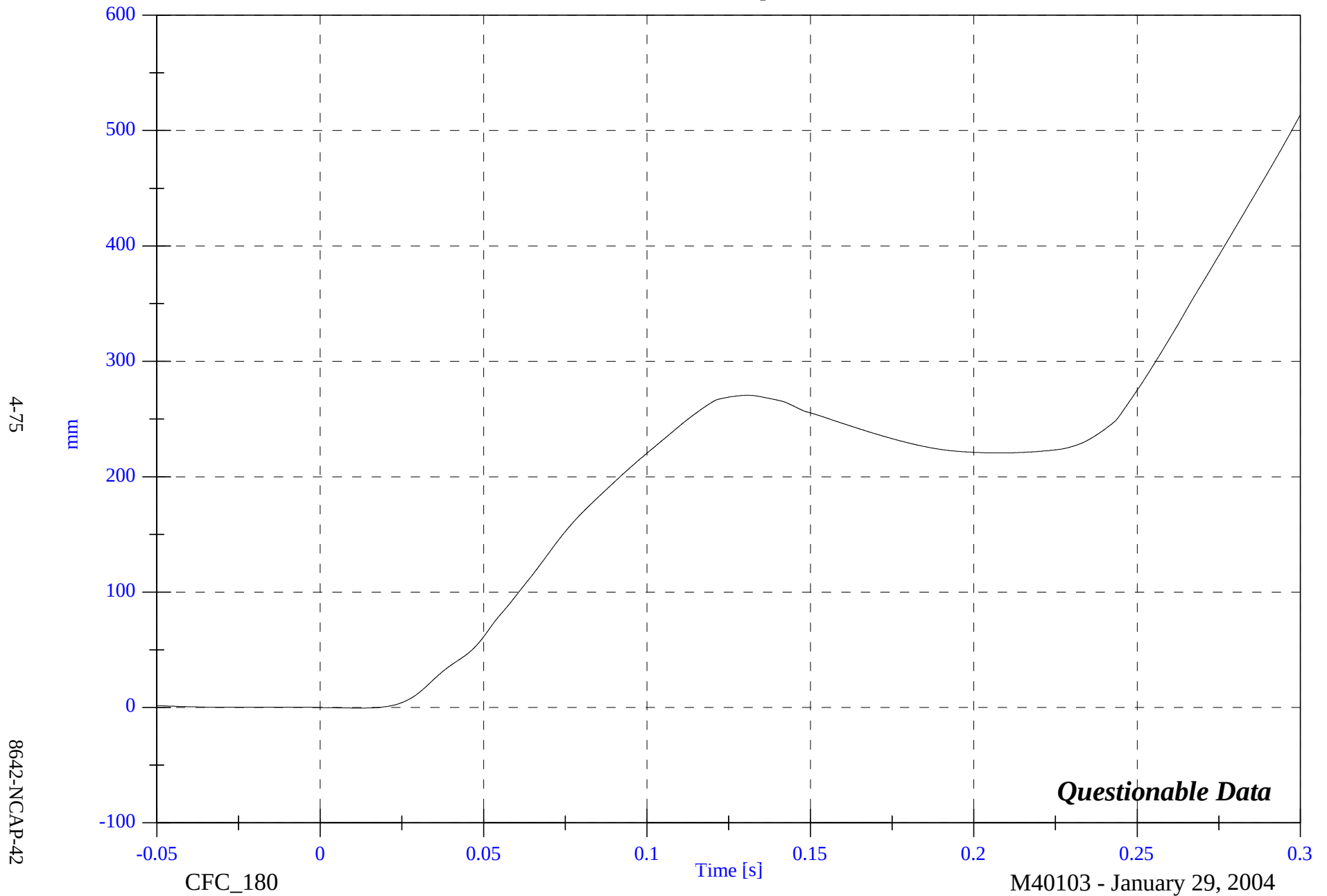


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P3 Seat z Displacement

Max: 513.7 [mm] at 0.300 [s]

Min: -0.6 [mm] at 0.012 [s]

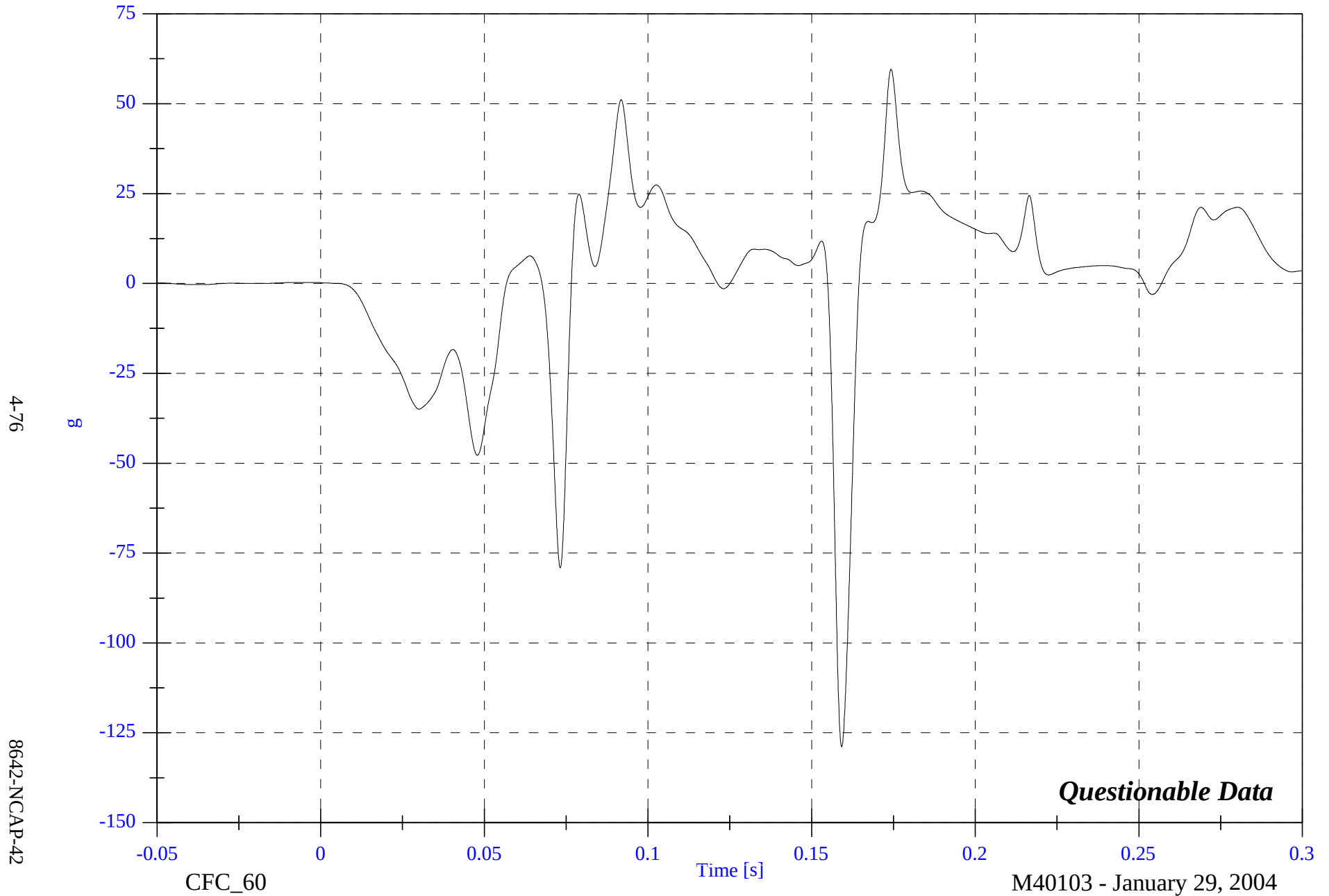


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Seat x

Max: 59.6 [g] at 0.174 [s]

Min: -128.9 [g] at 0.159 [s]

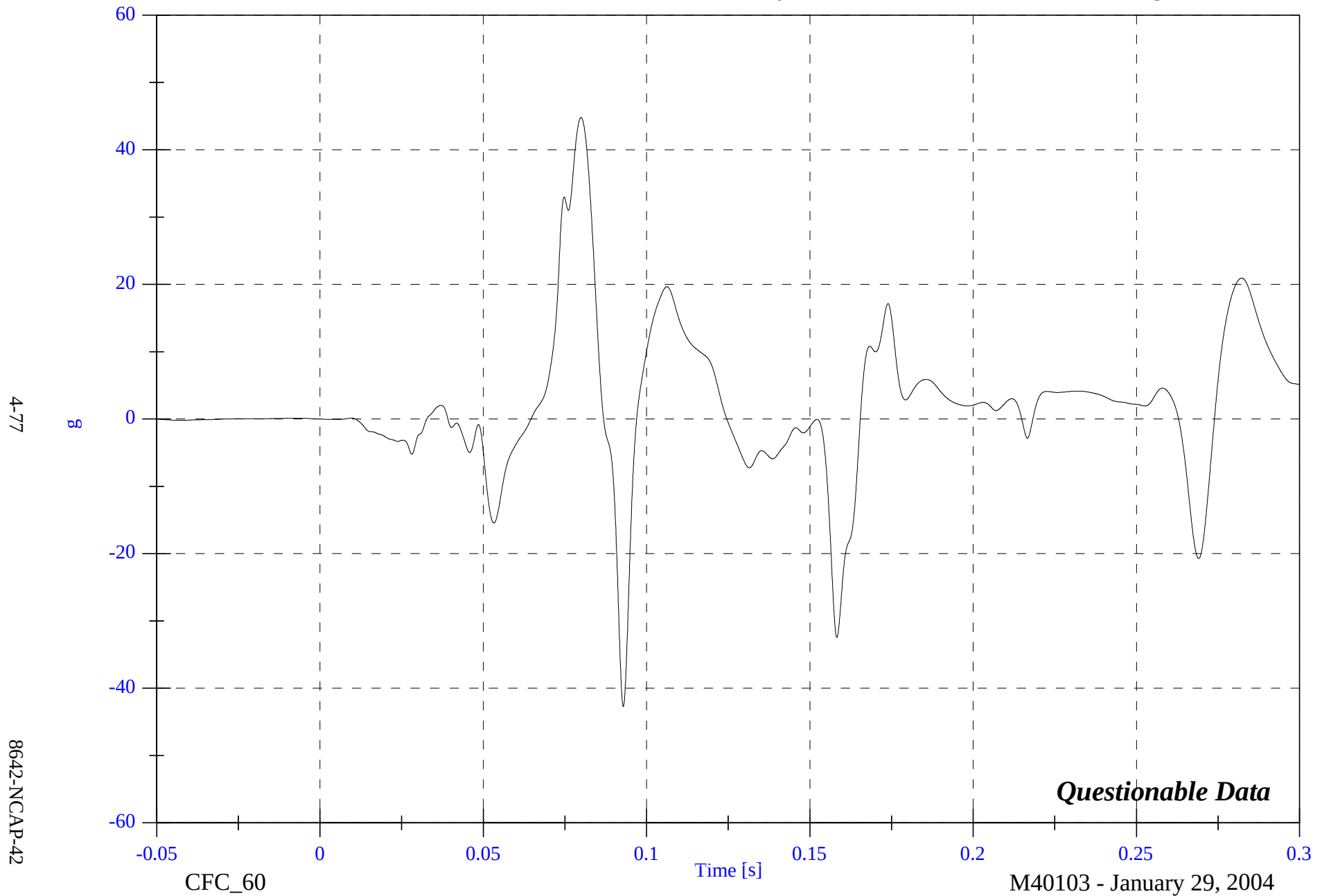


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Seat y

Max: 44.8 [g] at 0.080 [s]

Min: -42.7 [g] at 0.093 [s]

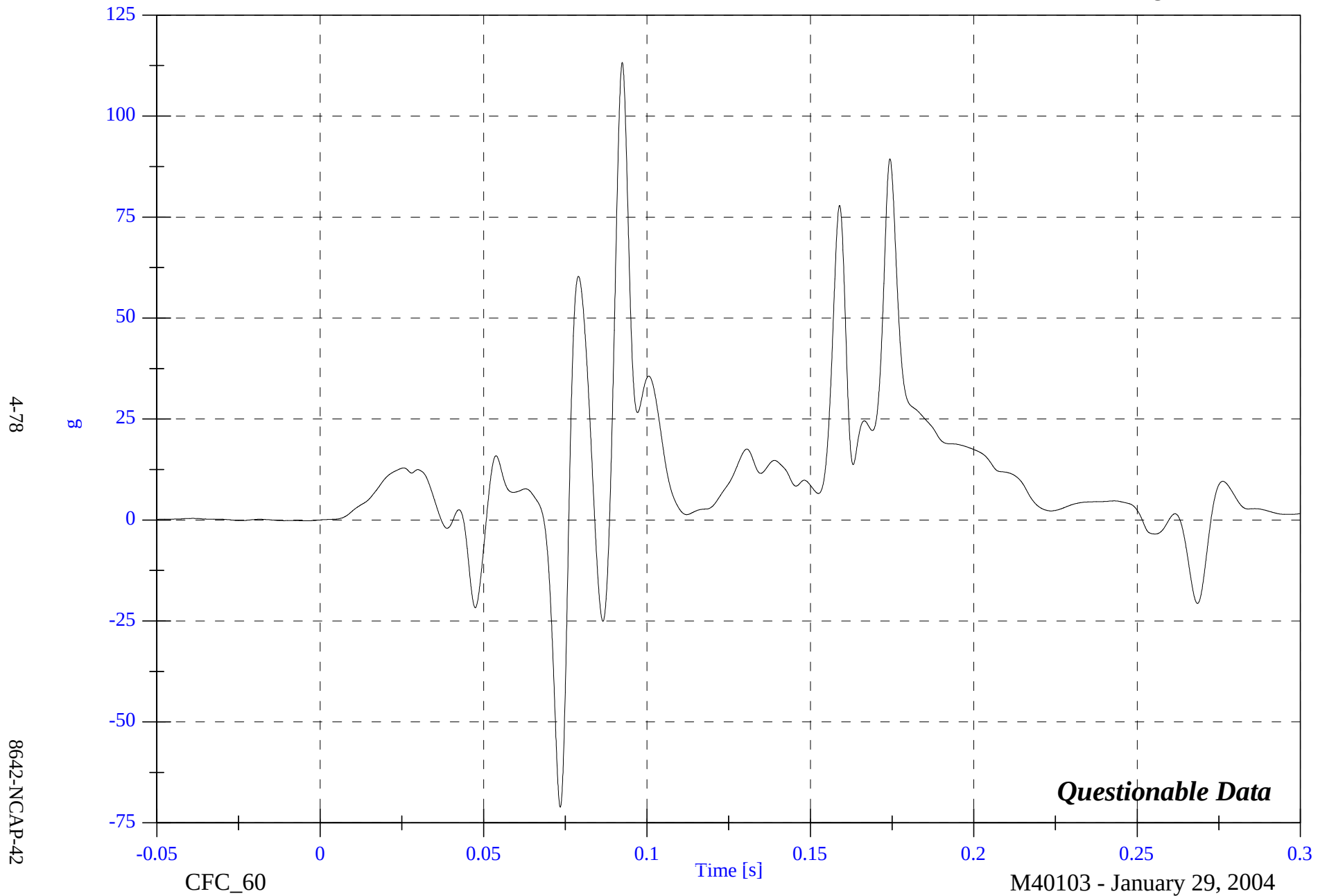


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Seat z

Max: 113.3 [g] at 0.092 [s]

Min: -71.1 [g] at 0.073 [s]

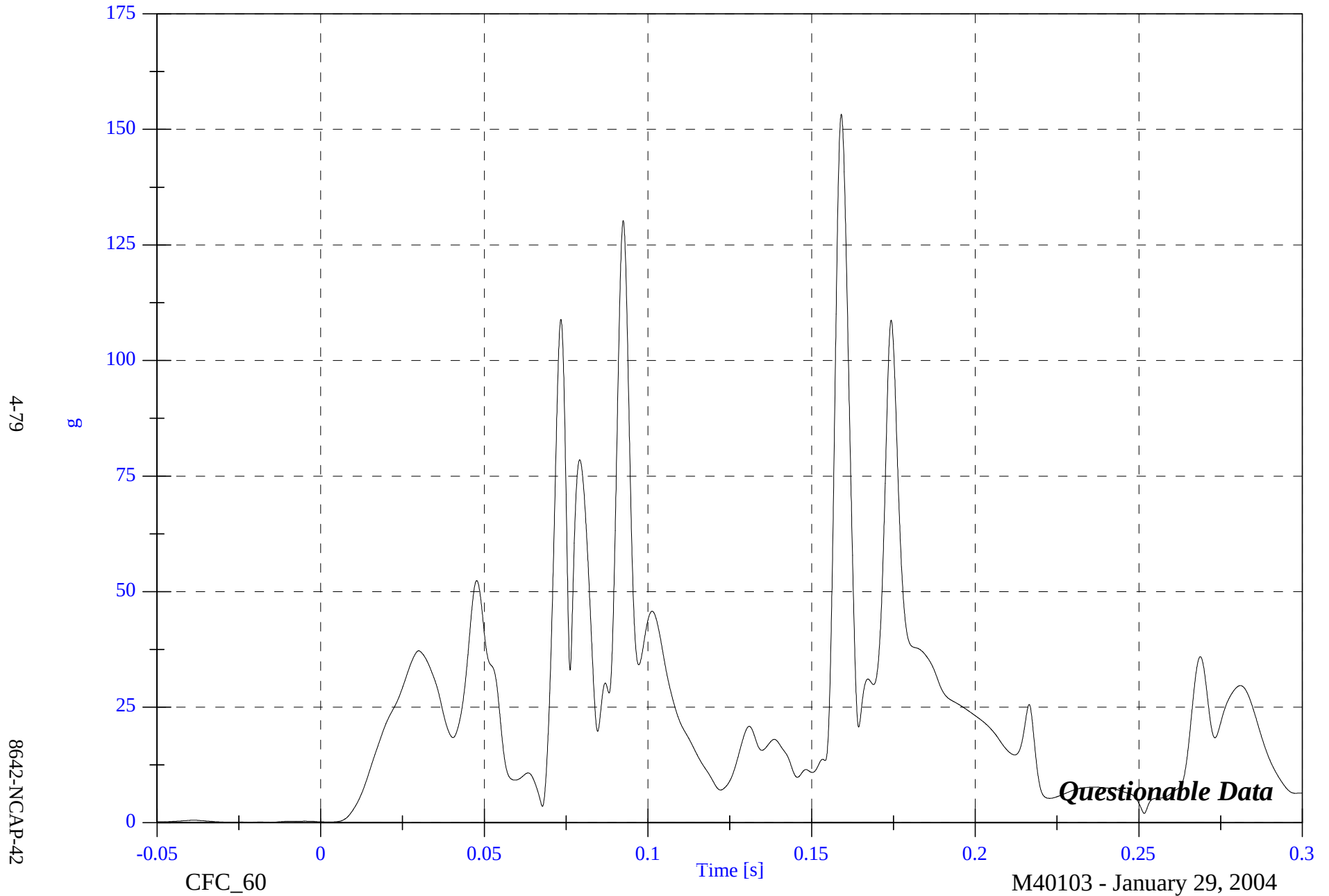


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Seat Resultant

Max: 153.3 [g] at 0.159 [s]

Min: 0.0 [g] at -0.022 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Seat x Velocity

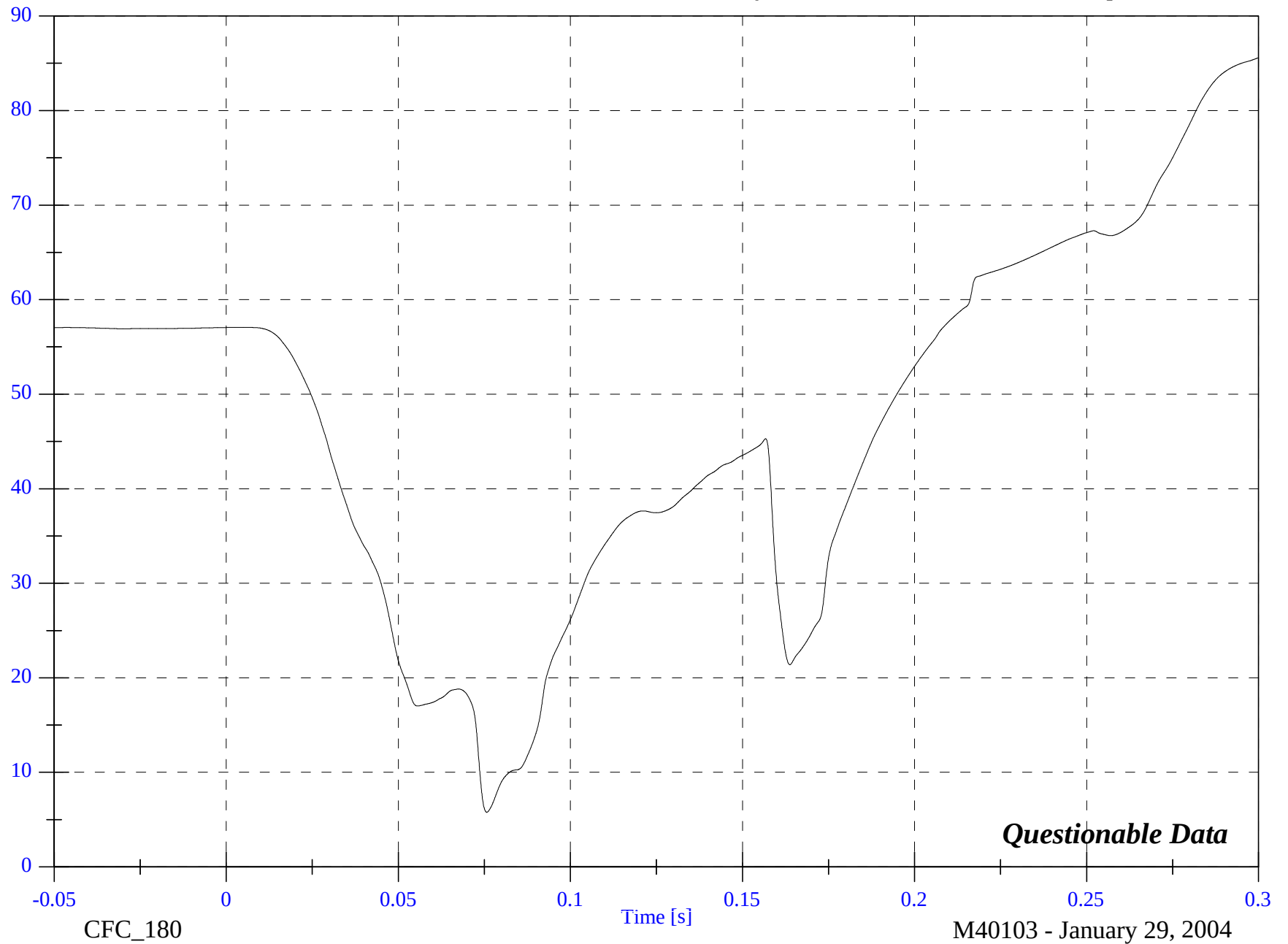
Max: 85.6 [kph] at 0.300 [s]

Min: 5.8 [kph] at 0.076 [s]

4-80

kph

8642-NCAP-42



2004 NCAP Test 6 2004 Chevrolet Colorado

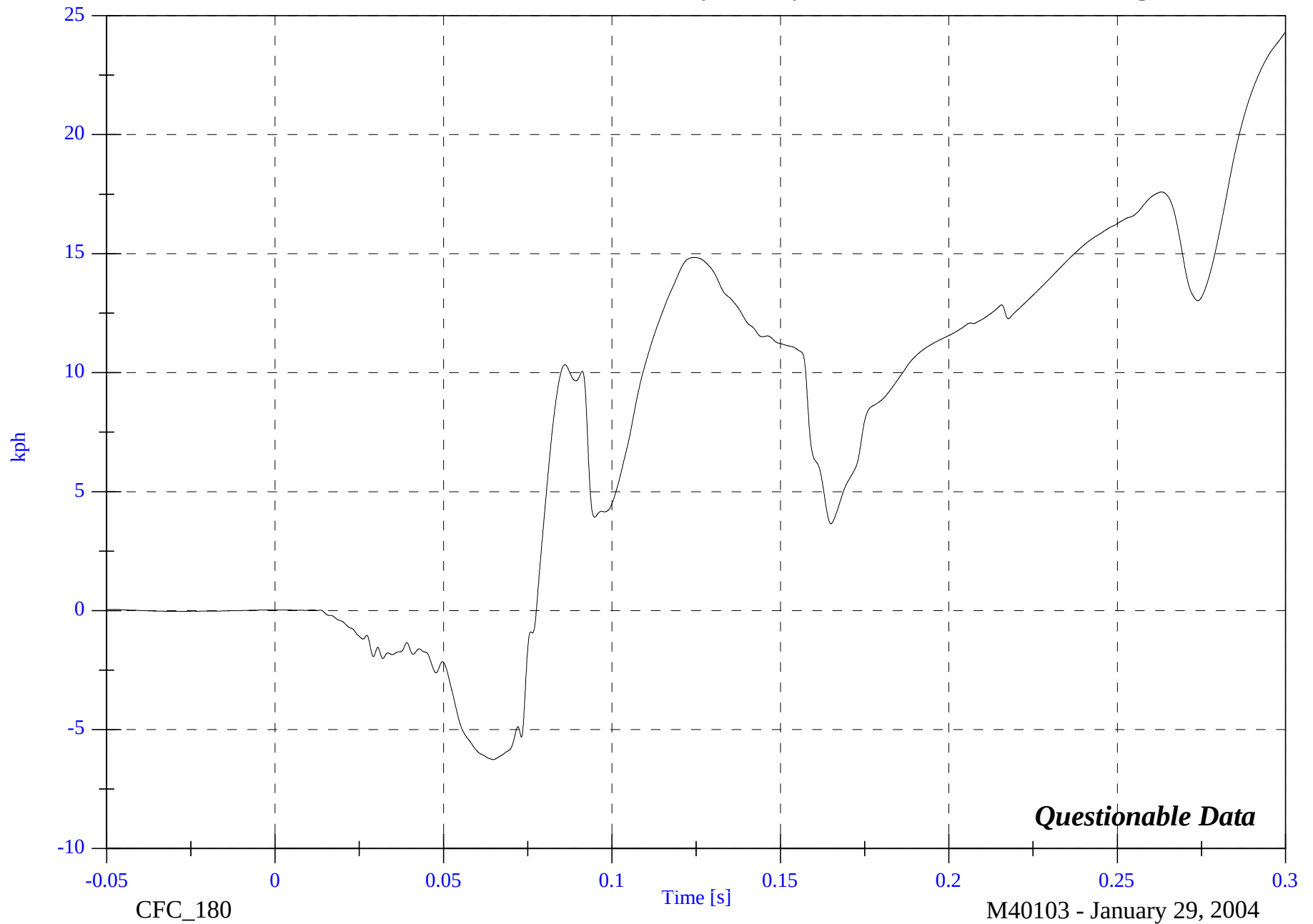
V1P4 Seat y Velocity

Max: 24.3 [kph] at 0.300 [s]

Min: -6.3 [kph] at 0.065 [s]

4-81

8642-NCAP-42

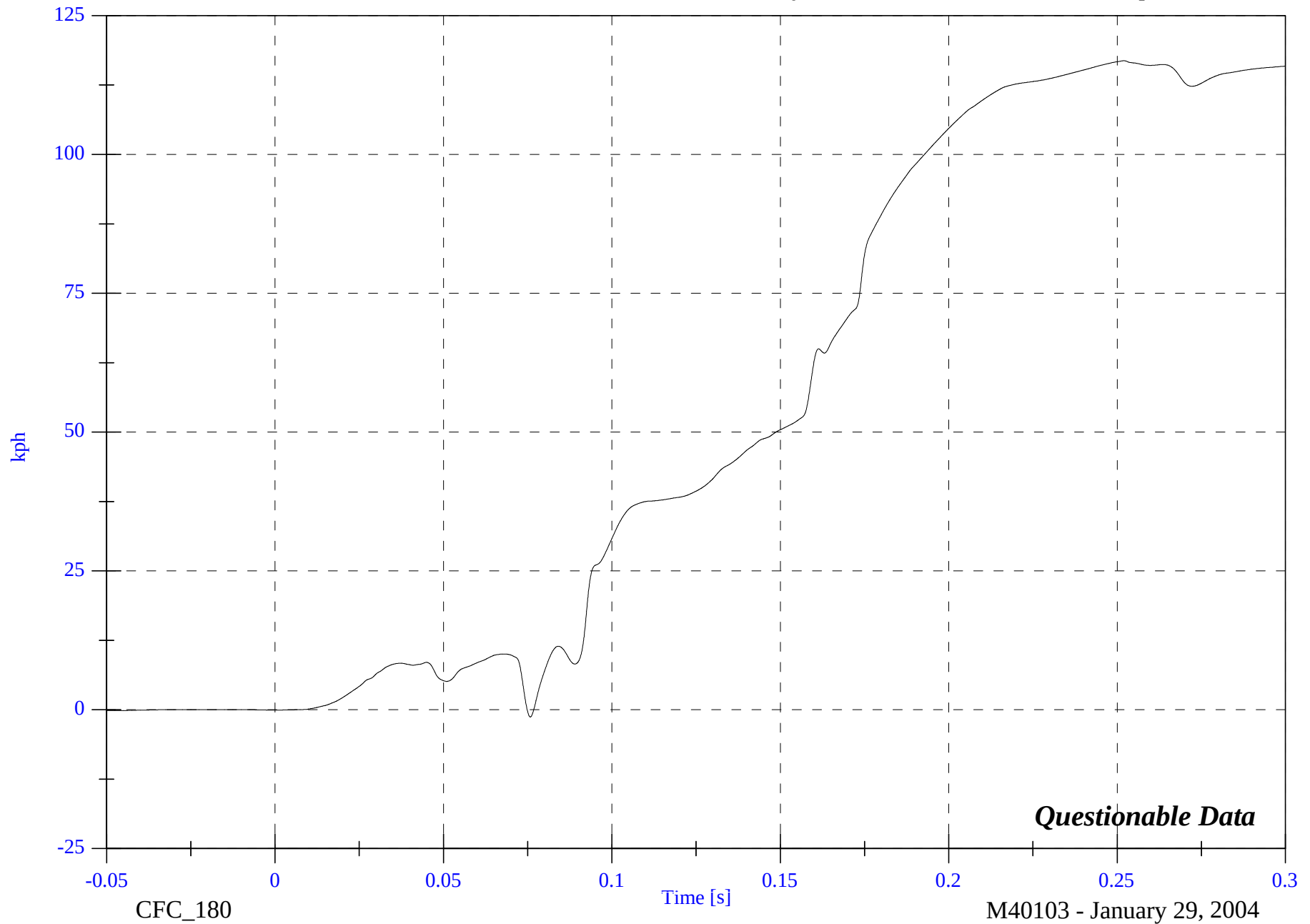


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Seat z Velocity

Max: 116.9 [kph] at 0.252 [s]

Min: -1.3 [kph] at 0.076 [s]



2004 NCAP Test 6 2004 Chevrolet Colorado

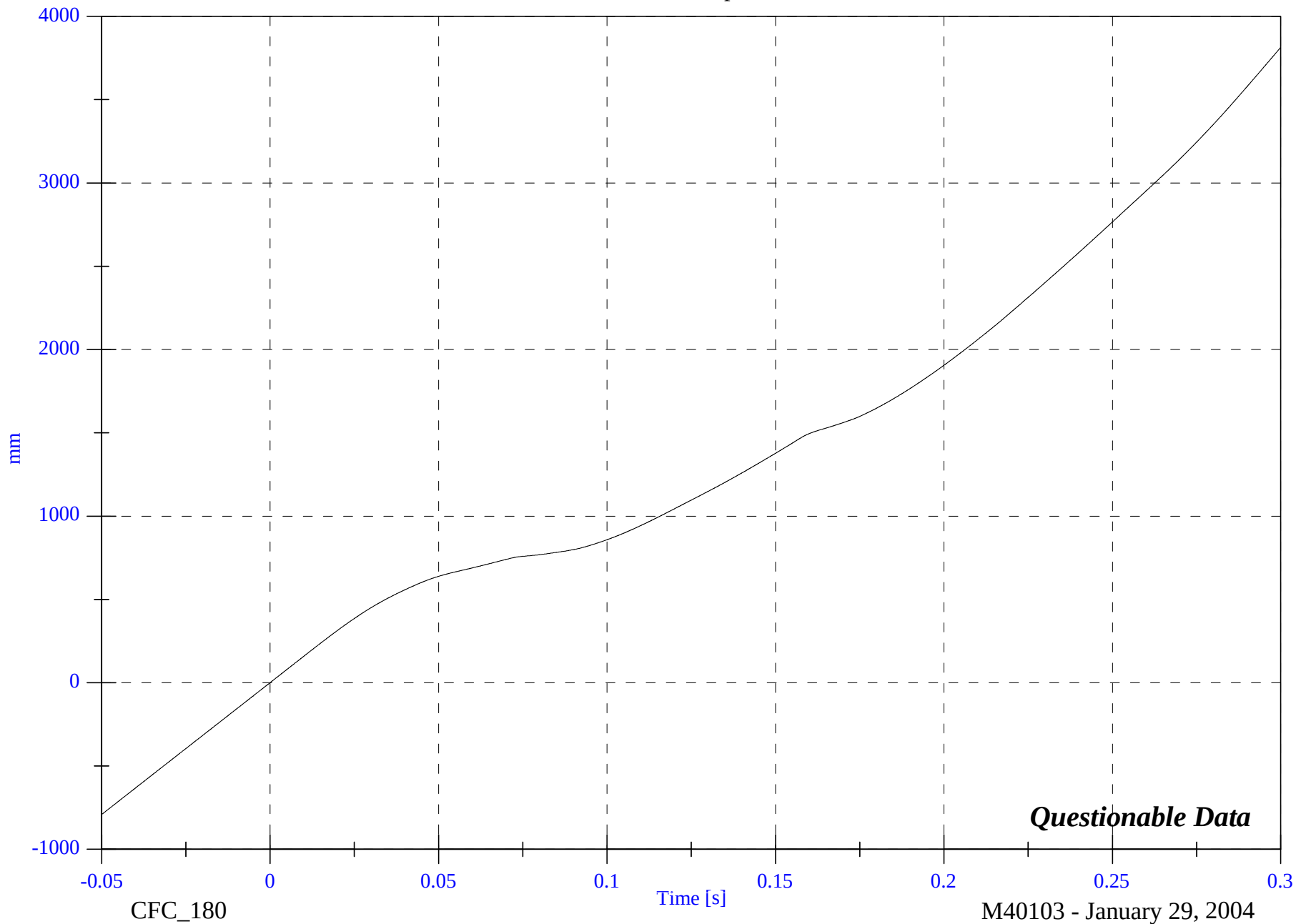
V1P4 Seat x Displacement

Max: 3813.5 [mm] at 0.300 [s]

Min: -791.4 [mm] at -0.050 [s]

4-83

8642-NCAP-42



Questionable Data

2004 NCAP Test 6 2004 Chevrolet Colorado

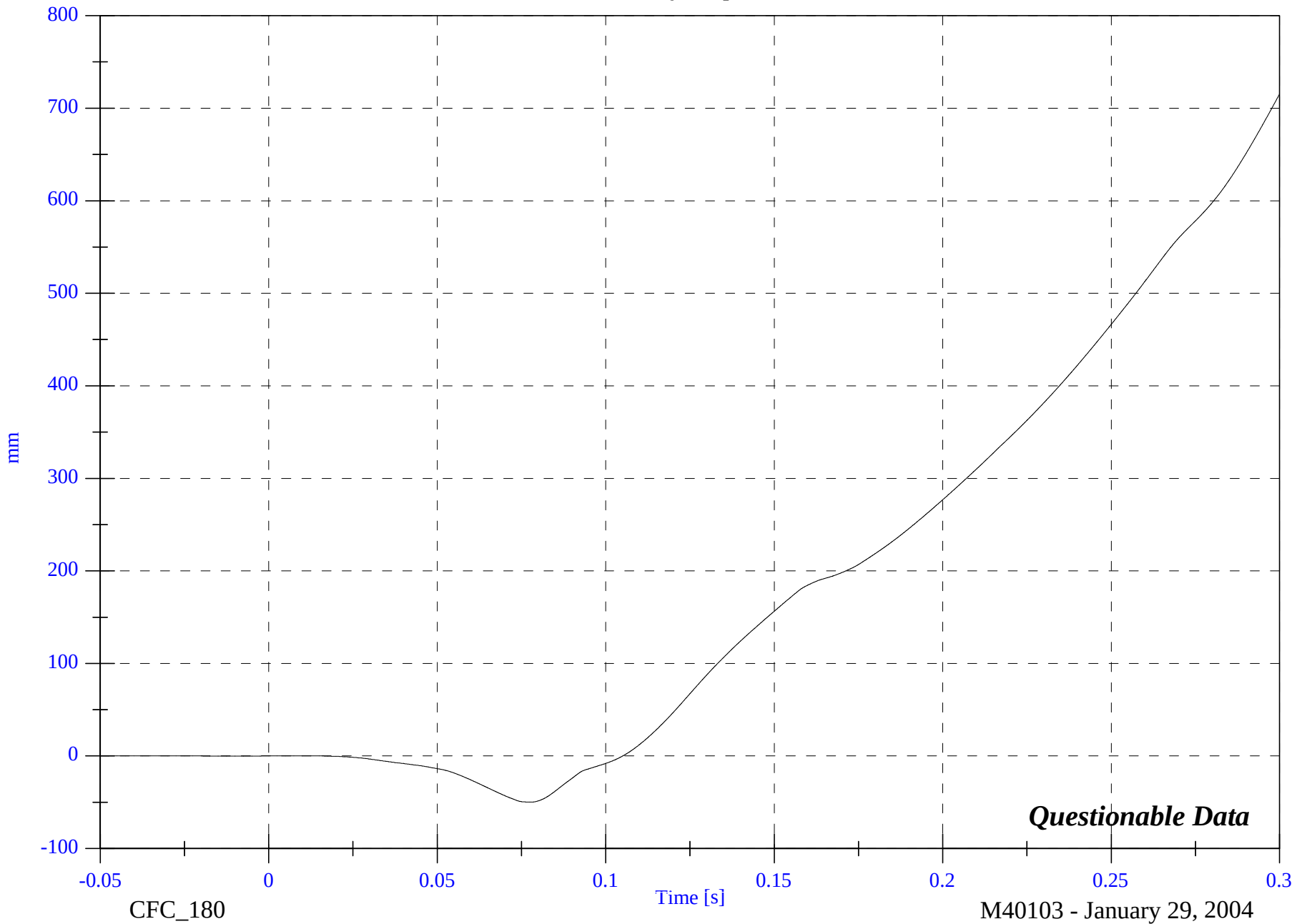
V1P4 Seat y Displacement

Max: 715.2 [mm] at 0.300 [s]

Min: -49.9 [mm] at 0.078 [s]

4-84

8642-NCAP-42

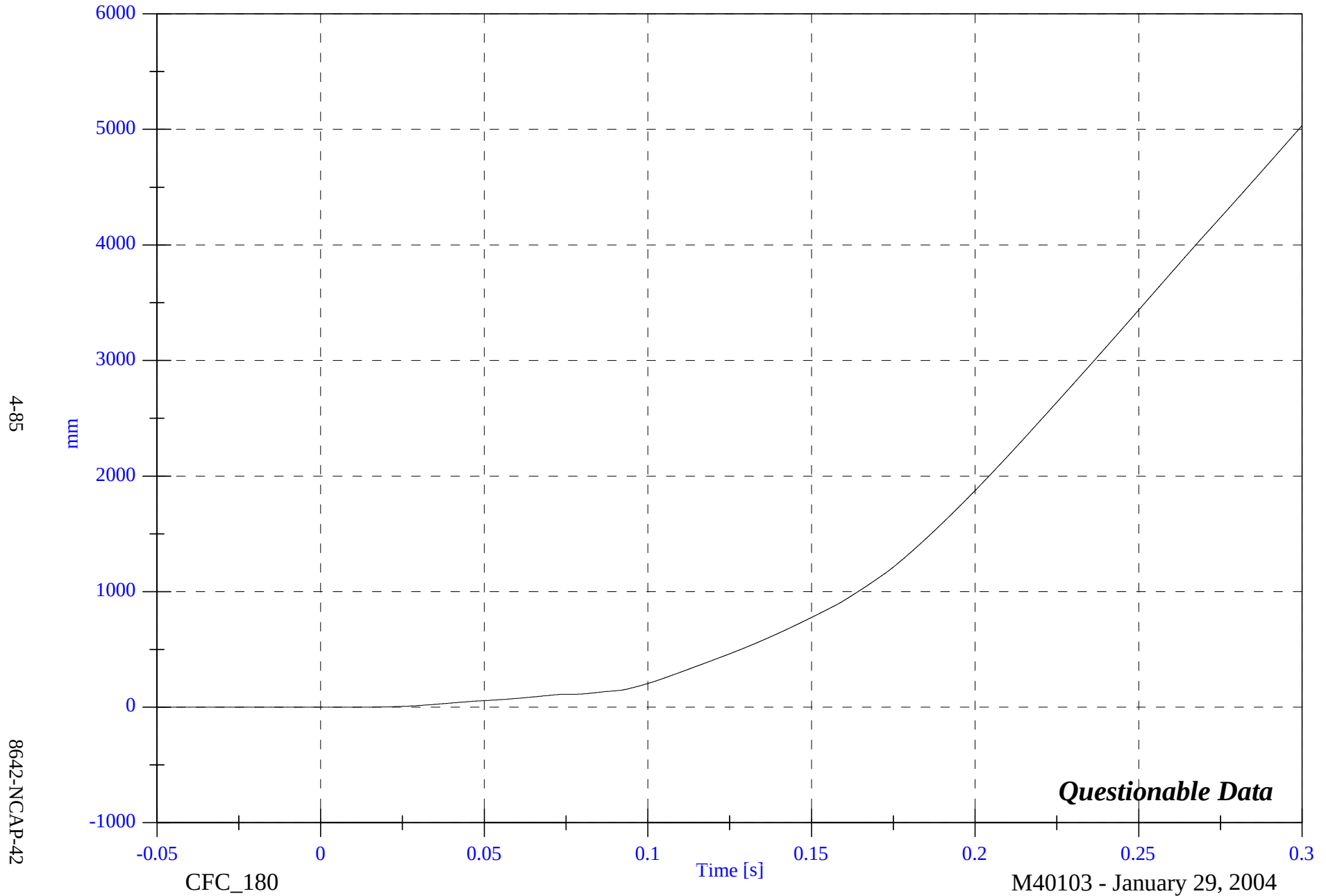


2004 NCAP Test 6 2004 Chevrolet Colorado

V1P4 Seat z Displacement

Max: 5033.2 [mm] at 0.300 [s]

Min: -0.1 [mm] at 0.007 [s]



SECTION 5

CHILD DUMMY CALIBRATION INFORMATION

PART 572P
HEAD DROP TEST

Dummy Serial Number 044
Sequential Test Number 1
Date 01-21-2004
Workfile 044H 01-21-04

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	66-78 Deg F	70.0 F
Relative Humidity	10% - 70%	35.00 %
Peak Resultant Acceleration	250-280 G's	271.45 Gs
Peak Lateral Acceleration	15 G's Max	6.74 Gs
Is Acceleration Curve Unimodal?	<10%	4.71 %

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572P
NECK FLEXION TEST

Dummy Serial Number 044
 Sequential Test Number 1
 Date 10-22-03
 Workfile 044NF 10-22-03

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		20.6 – 22.2 Deg C	21.11
Relative Humidity		10% - 70%	38.00
Pendulum Speed		5.40-5.60 m/s	5.46
Pendulum Pulse	10 ms	2.00 – 2.70 m/s	2.14
	15 ms	3.00 – 4.00 m/s	3.13
	20 ms	4.00 – 5.10 m/s	4.30
D Plane Rotation	Max	70.0 – 82.0 Deg	75.72
Maximum Occipital Moment		42.00 - 53.00 N-m	52.40
Occipital Moment Decay		60.0 - 80.0 ms	74.60

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572P
NECK EXTENSION TEST

Dummy Serial Number 044
Sequential Test Number 2
Date 10-22-03
Workfile 044NE2 10-22-03

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		20.6 – 22.2 Deg C	21.11
Relative Humidity		10% - 70%	38.00
Pendulum Speed		3.55 – 3.75 m/s	3.72
Pendulum Pulse	10 ms	1.00 – 1.40 m/s	1.05
	15 ms	1.90 – 2.50 m/s	1.98
	20 ms	2.80 – 3.50 m/s	2.82
D Plane Rotation	Max	83.0 – 93.0 Deg	85.02
Maximum Occipital Moment		-53.30 - -43.70 N-m	-45.28
Occipital Moment Decay		60.0 - 80.0 ms	67.60

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572P
THORAX IMPACT TEST

Dummy Serial Number 044
Sequential Test Number 3
Date 01-22-2004
Workfile 044T3 01-22-04

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	69-72 Deg F	70.0 F
Relative Humidity	10% - 70%	35.00 %
Pendulum Velocity	19.40 – 20.00 Ft/s	19.67 ft/s
Maximum Deflection	1.30 – 1.50 in	1.35 in
Maximum Resistive Force	152.90 – 182.10 Lbs	168.03 lbf
Internal Hysteresis	65 - 85 %	72.89 %
Sternum Force Criteria	193.30 lbf	186.73 lbf

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572P
EXTERNAL DIMENSIONS

Dummy Serial Number 044
Sequential Test Number 1
Date 10-22-2003

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Total Sitting Height	A	21.2 – 21.8 in	21.4
Shoulder Pivot Height	B	12.1 - 12.7 in	12.4
H-Point Height	C	1.35 – 1.75 in	1.57
H-Point from Backline	D	2.24 – 2.64 in	2.76
Shoulder Pivot from Backline	E	2.40 – 2.80 in	2.76
Thigh Clearance	F	3.19 – 3.59 in	3.27
Back of Elbow to Fingertip	G	9.74 – 10.34 in	10.04
Head back from Backline	H	1.9 – 2.3 in	2.17
Shoulder - Elbow Length	I	7.3 – 7.9 in	7.87
Elbow Rest Height	J	5.26 – 5.86 in	5.31
Buttock to Knee Length	K	11.21 – 11.81 in	11.41
Popliteal Height	L	8.60 – 9.20 in	8.86
Knee Pivot Height	M	9.51 – 10.11 in	9.84
Buttock Popliteal Length	N	8.58 - 9.18 in	8.86
Chest Depth with Jacket	O	5.45 - 6.05 in	5.98
Foot Length	P	5.42 – 5.82 in	5.47
Stature	Q	36.7 – 37.7 in	37.01
Buttock to Knee Pivot Length	R	9.9 - 10.3 in	10.04
Head Breadth	S	5.15 – 5.55 in	5.16
Head Depth	T	6.59 -7.19 in	6.81
Hip Breadth	U	7.9 – 8.5 in	8.15
Shoulder Breadth	V	9.31 – 9.91in	9.49
Foot Breadth	W	2.11 – 2.51 in	2.32
Head Circumference	X	19.7 – 20.3 in	20.0
Chest Circumference (With Jacket)	Y	20.75 – 21.75 in	21.65
Waist Circumference	Z	20.75 – 21.75 in	21.66
Location for Chest Circumference	AA	9.8 – 10.2 in	10.04
Location for Waist Circumference	BB	6.3 – 6.7 in	6.50

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572P
HEAD DROP TEST

Dummy Serial Number 142
Sequential Test Number 1
Date 01-12-2004
Workfile 142H2 01-12-04

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	66-78 Deg F	70.00 F
Relative Humidity	10% - 70%	33.00 %
Peak Resultant Acceleration	250-280 G's	263.52 Gs
Peak Lateral Acceleration	15 G's Max	12.48 Gs
Is Acceleration Curve Unimodal?	<10%	4.38 %

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572P
NECK FLEXION TEST

Dummy Serial Number 142
Sequential Test Number 1
Date 12-11-03
Workfile 142nf 12-11-03

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		20.6 – 22.2 Deg C	21.11
Relative Humidity		10% - 70%	27.0
Pendulum Speed		5.40-5.60 m/s	5.55
Pendulum Pulse	10 ms	2.00 – 2.70 m/s	2.05
	15 ms	3.00 – 4.00 m/s	3.03
	20 ms	4.00 – 5.10 m/s	4.13
D Plane Rotation	Max	70.0 – 82.0 Deg	80.64
Maximum Occipital Moment		42.00 - 53.00 N-m	42.46
Occipital Moment Decay		60.0 - 80.0 ms	69.60

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572P
NECK EXTENSION TEST

Dummy Serial Number 142
Sequential Test Number 2
Date 12-11-03
Workfile 142ne2 12-11-03

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		20.6 – 22.2 Deg C	21.11
Relative Humidity		10% - 70%	27.00
Pendulum Speed		3.55 – 3.75 m/s	3.60
Pendulum Pulse	10 ms	1.00 – 1.40 m/s	1.10
	15 ms	1.90 – 2.50 m/s	2.02
	20 ms	2.80 – 3.50 m/s	2.85
D Plane Rotation	Max	83.0 – 93.0 Deg	83.64
Maximum Occipital Moment		-53.30 - -43.70 N-m	-52.76
Occipital Moment Decay		60.0 - 80.0 ms	72.40

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572P
THORAX IMPACT TEST

Dummy Serial Number 142
Sequential Test Number 1
Date 12-12-03
Workfile 142T 12-12-03

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	69-72 Deg F	70.0
Relative Humidity	10% - 70%	35.0
Pendulum Velocity	19.40 – 20.00 Ft/s	19.70
Maximum Deflection	1.30 – 1.50 in	1.30
Maximum Resistive Force	152.90 – 182.10 Lbs	167.53
Internal Hysteresis	65 - 85 %	76.46
Sternum Force Criteria	193.30 lbf	179.91

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572P
EXTERNAL DIMENSIONS

Dummy Serial Number 142
Sequential Test Number 1
Date 12-11-03

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Total Sitting Height	A	21.2 – 21.8 in	21.2
Shoulder Pivot Height	B	12.1 - 12.7 in	12.4
H-Point Height	C	1.35 – 1.75 in	1.55
H-Point from Backline	D	2.24 – 2.64 in	2.5
Shoulder Pivot from Backline	E	2.40 – 2.80 in	2.6
Thigh Clearance	F	3.19 – 3.59 in	3.5
Back of Elbow to Fingertip	G	9.74 – 10.34 in	10.1
Head back from Backline	H	1.9 – 2.3 in	2.1
Shoulder - Elbow Length	I	7.3 – 7.9 in	7.7
Elbow Rest Height	J	5.26 – 5.86 in	5.5
Buttock to Knee Length	K	11.21 – 11.81 in	11.5
Popliteal Height	L	8.60 – 9.20 in	8.9
Knee Pivot Height	M	9.51 – 10.11 in	9.75
Buttock Popliteal Length	N	8.58 - 9.18 in	9.0
Chest Depth with Jacket	O	5.45 - 6.05 in	5.8
Foot Length	P	5.42 – 5.82 in	5.8
Stature	Q	36.7 – 37.7 in	37.0
Buttock to Knee Pivot Length	R	9.9 - 10.3 in	10.25
Head Breadth	S	5.15 – 5.55 in	5.4
Head Depth	T	6.59 - 7.19 in	6.9
Hip Breadth	U	7.9 – 8.5 in	8.1
Shoulder Breadth	V	9.31 – 9.91 in	9.9
Foot Breadth	W	2.11 – 2.51 in	2.3
Head Circumference	X	19.7 – 20.3 in	20.3
Chest Circumference (With Jacket)	Y	20.75 – 21.75 in	21.4
Waist Circumference	Z	20.75 – 21.75 in	21.4
Location for Chest Circumference	AA	9.8 – 10.2 in	10.00
Location for Waist Circumference	BB	6.3 – 6.7 in	6.50

Remarks:

Laboratory Technician:

B. Swiecicki

SECTION 6

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

HYBRID III INSTRUMENTATION

	POSITION #3 (RIGHT) SERIAL NO.: 044		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-P17912	ENDEVCO	21-Oct-03
HEAD AY	AC-P17743	ENDEVCO	21-Oct-03
HEAD AZ	AC-P15319	ENDEVCO	21-Oct-03
HEAD REAR AZ	AC-02I02I10-N06	ENTRAN	8-Dec-03
UPPER NECK FX	LC-248-FX	DENTON	1-Oct-03
UPPER NECK FY	LC-248-FY	DENTON	1-Oct-03
UPPER NECK FZ	LC-248-Fz	DENTON	1-Oct-03
UPPER NECK MX	LC-248-Mx	DENTON	1-Oct-03
UPPER NECK MY	LC-248-My	DENTON	1-Oct-03
UPPER NECK MZ	LC-248-Mz	DENTON	1-Oct-03
LOWER NECK FX	LC-249Fx	DENTON	1-Oct-03
LOWER NECK FY	LC-249Fy	DENTON	1-Oct-03
LOWER NECK FZ	LC-249Fz	DENTON	1-Oct-03
LOWER NECK MX	LC-249Mx	DENTON	1-Oct-03
LOWER NECK MY	LC-249My	DENTON	1-Oct-03
LOWER NECK MZ	LC-249Mz	DENTON	1-Oct-03
CHEST AX	AC-P15334	ENDEVCO	21-Oct-03
CHEST AY	AC-P15321	ENDEVCO	21-Oct-03
CHEST AZ	AC-P17758	ENDEVCO	21-Oct-03
CHEST DISPLACEMENT X	DS-044	SERVO	22-Nov-03
PELVIS AX	AC-P16755	ENDEVCO	21-Oct-03
PELVIS AY	AC-P15591	ENDEVCO	21-Oct-03
PELVIS AZ	AC-P16155	ENDEVCO	21-Oct-03
TETHER BELT LOAD	LC-174	First Technology	10-Oct-03

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

HYBRID III INSTRUMENTATION

	POSITION #4 (LEFT) SERIAL NO.: 142		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	AC-P23804	ENDEVCO	18-Sep-03
HEAD AY	AC-99102-F12	ENTRAN	18-Aug-03
HEAD AZ	AC-00L13-F03	ENDEVCO	18-Aug-03
HEAD REAR AZ	AC-P23926	ENDEVCO	10-Sep-03
UPPER NECK FX	LC-213Fx	DENTON	1-Oct-03
UPPER NECK FY	LC-213Fy	DENTON	1-Oct-03
UPPER NECK FZ	LC-213Fz	DENTON	1-Oct-03
UPPER NECK MX	LC-213Mx	DENTON	1-Oct-03
UPPER NECK MY	LC-213My	DENTON	1-Oct-03
UPPER NECK MZ	LC-213Mz	DENTON	1-Oct-03
LOWER NECK FX	LC-214Fx	DENTON	1-Oct-03
LOWER NECK FY	LC-214Fy	DENTON	1-Oct-03
LOWER NECK FZ	LC-214Fz	DENTON	1-Oct-03
LOWER NECK MX	LC-214Mx	DENTON	1-Oct-03
LOWER NECK MY	LC-214My	DENTON	1-Oct-03
LOWER NECK MZ	LC-214Mz	DENTON	1-Oct-03
CHEST AX	AC-99108-F30	ENTRAN	18-Aug-03
CHEST AY	AC-99108-F28	ENTRAN	18-Aug-03
CHEST AZ	AC-99H30-Z04	ENTRAN	18-Aug-03
CHEST DISPLACEMENT X	DS-142	SERVO	18-Aug-03
PELVIS AX	AC-99102-F06	ENTRAN	18-Aug-03
PELVIS AY	AC-99102-F15	ENTRAN	18-Aug-03
PELVIS AZ	AC-99G29-Q13	ENTRAN	18-Aug-03
TETHER BELT LOAD	LC-175	First Technology	10-Oct-03

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

CRS INSTRUMENTATION

	CRS ACCELEROMETERS		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
P3 CRS AX	AC-P16585	ENDEVCO	24-Sep-03
P3 CRS AY	AC-P14438	ENDEVCO	24-Sep-03
P3 CRS AZ	AC-P15747	ENDEVCO	24-Sep-03
P4 CRS AX	AC-P19246	ENDEVCO	16-Jan-04
P4 CRS AY	AC-P18682	ENDEVCO	16-Jan-04
P4 CRS AZ	AC-P23873	ENDEVCO	16-Jan-04